





**GALLT-Y-FFRITH RHEDYN LEAD MINING COMPANY (LIMITED).**—5000 shares at £10 each.  
The MEMORANDUM OF ASSOCIATION NOW LIES FOR SIGNATURE at the offices of the company, and, when fully signed, will be registered under the Act which limits liability to shareholders. Parties holding certificates of shares are requested to sign it forthwith.  
Applications may be made for the 400 shares unsold, at £3 deposit, following the report of the 17th July. No further calls for twelve months, and then, if required, not to exceed 2s. 6d. per share, and at intervals of three months.  
Offices, 9, Austin Friars, Aug. 3, 1856. **WILLIAM EVANS, Sec.**

**TREBURGETT CROWAN CONSOLIDATED COPPER MINING COMPANY (LIMITED BY ACT OF PARLIAMENT).**  
SITUATE IN THE PARISH OF CROWAN, THE BEST MINING DISTRICT IN CORNWALL.

Capital £50,000, in 5000 shares of £10 each.—Deposit £3 per share.  
The old shares of £1 each in the Treburgett Consols Mine will be received in exchange, and in payment of the deposit of £3 per share.

MANAGING DIRECTOR—John Pegg, Esq., 9, Austin Friars.  
BANKERS—Unity Bank, Unity Buildings, Cannon-street.  
SOLICITORS—Messrs. Baker and Knight, 34, Lime-street.  
BROKER—Peter Watson, Esq., 57, Threadneedle-street.  
SECRETARY—Mr. William Evans.

OFFICES.—No. 9, AUSTIN FRIARS, LONDON.

Applications are yet required for the 3000 shares unsold; the whole must be applied for prior to an allotment being made.

The capital of the company is £50,000, divided into 5000 shares of £10 each, whereupon a deposit of £3 per share is to be paid, and the remainder called for as required for the mining operations, by instalments not exceeding 2s. 6d. per share, and that at intervals of not less than three months.  
Prospectuses may be obtained at the offices of the company.

**WILLIAM EVANS, Sec.**

#### FORM OF APPLICATION FOR SHARES.

To the Directors of the Treburgett Crowan Consolidated Copper Mining Company (Limited).

GENTLEMEN,—I request you to allot me shares in your company, of £10 each, on which I enclose you a deposit of £1 per share, and hereby undertake to accept such shares, or any less number, and to pay the further sum of £2 per share on allotment, and the further calls as required, up to £10 per share, subject to the provisions of the Act of Parliament which limits liability to shareholders.

I am, Gentlemen, your obedient servant.

Name in full.....

Residence.....

Profession or business.....

**UNITY FIRE INSURANCE ASSOCIATION.**

Capital £2,000,000 sterling.

CHIEF OFFICES..... UNITY BUILDINGS, 3, CANNON STREET, CITY.

BRANCH OFFICES..... 1, NEW COVENTRY STREET, LEICESTER SQUARE.

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**THOMAS H. BAYLIS, Managing Director.**

#### PROGRESS OF BUSINESS.

1st Year, ending September 25, 1853	No. of policies effected.	Amount insured.
2d Year, ending September 25, 1854	4,277	£2,398,994
3d Year, ending September 25, 1855	10,107	7,428,018
4th Year, ending September 25, 1856	10,871	7,556,496
Nine months, ending June 25, 1856	7,747	4,991,708
Total	33,002	£22,375,200

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London: Published at the Mining Journal Office, 26, Fleet-street, London.

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Amongst the most important of the resources of Turkey and the Levant may be ranked their mineral productions. Extensive mines of coal, iron, chromate of iron, lead, copper, and other minerals, are known to exist, the working of which, if prudently conducted, cannot fail to promote the commercial relations between England and the east of Europe, and to produce highly satisfactory results to those investing their capital in the undertaking.

For the purpose of developing these resources, it is proposed to form a company under the Joint-Stock Companies Act, 1856, limiting the liability of the shareholders to the amount of their subscriptions.

It has been considered desirable that the operations of the company should be gradual, commencing with undertakings which previous experience has demonstrated as offering a safe investment with highly remunerative results.

With this view, the promoters have made provisional arrangements with parties enjoying exclusive privileges, conceded by the Sultan and the Greek Government, for the supply of emery stone, an article of known importance and increasing consumption. Under the Sultan's firman, the company will have the privilege of working the mines at Scalanova, in Asia Minor; and, under contract with the Greek Government, those at Naxos, as well as in all other parts of the empire and kingdom.

The annual consumption of emery stone in Europe was calculated two years since at 3000 tons. Recent investigations, by persons intimate with the trade, have, however, led to the conclusion that the above is an under-estimate; and looking to the increased manufacture and use of plate glass, machinery, steel, and other substances, for the polishing of which emery stone is necessary, the demand may reasonably be expected largely to increase.

In order to simplify the operations of the proposed company as much as possible, the promoters have made a further provisional arrangement with competent parties to extract the emery stone from the mines, and deliver, at fixed prices, such quantities as the company may desire at Smyrna, where it will be handed over to the company's agent for shipment to Europe or elsewhere.

The provisional directors have had elaborate details submitted to their consideration, based upon the existing demand and supply of emery, and having carefully investigated the subject, and by gentlemen practically acquainted with the trade, they have satisfied themselves of the soundness of the proposed undertaking, and the prospect which it holds out of very profitable returns for the capital invested. These details will be submitted, on application at the offices, to any parties desiring to take a substantial interest in the undertaking, and fully warrant the provisional directors in stating that, from this source alone, dividends at the rate of 10 per cent. may be calculated upon, even for the first 12 months, with progressive increase in future years.

Every spot of capital put up can be repaid upon payment of the instalment, will be made, except with the concurrence of the shareholders at a general meeting, convened for the purpose of considering whether the operations of the company shall be enlarged.

Official forms of application for shares may be obtained from the brokers; or the secretary, at the offices of the proposed company, 2, New Broad-street.

**THE MINERS' ELECTRO-CHEMICAL PROCESS,**

FOR THE

REDUCTION AND SEPARATION OF METALS FROM THEIR ORES.

By Her Majesty's Royal Letters Patent.

PATENTEE—Matt. French Wagstaffe, Esq., M.R.C.S., Walcot-place West, Lambeth;

John William Perkins, Esq., F.C.S., Poplar-terrace, Poplar.

Licenses will be granted to mine owners and mining companies for the adoption of the process on terms which may be obtained on application to the patentees, at No. 2, Poplar-terrace, Poplar; or to the solicitor, THOMAS LEE, Esq., 26, Moorgate-street.

**GWINEAR CONSOLS COPPER AND SILVER MINING COMPANY (LIMITED).**

To be Incorporated under the Joint-Stock Companies' Act, 1856, whereby the liability of the shareholders will be limited to the amount of their shares.

Capital £15,000, in 3000 shares of £5 each.

BANKERS—The Unity Joint-Stock Banking Company (Leicester-square Branch), 1, New Coventry-street.

SOLICITOR—James H. F. Lewis, Esq., 23, Essex-street, Strand.

OFFICES.—No. 2, UPPER WELLINGTON STREET, STRAND.

This extensive and valuable mine is situated in the parish of Gwinear, in the county of Cornwall, contiguous to the western boundary of Camborne—one of the richest mineral districts in the world.

The mine contains seven known lodes, also two cross-courses and an elvan course, considered to be continuations of the well-known lodes in Dolcoath (which within half a century yielded nearly £3,000,000 of minerals), and are composed of gossan, prismatic, blue, and black, and of copper, lead, and iron, and are of various sizes, their size being respectively from 2 to 4 ft. wide.

Several piles of black and yellow ore, mixed with gossan of an unusually rich description, have been recently raised west of the engine-shaft; and within the last 14 days a new lode of rich black and yellow ore has been cut in the adit level, which passes several hundred fathoms through the sett.

A most important and valuable feature of the Gwinear Consols is that the gossan, of which there is an abundance, is richly impregnated with silver, the result of an assay made by a scientific and eminent assayer showing an average of 40 ozs. of pure silver to the ton.

The peculiar advantages presented by the Gwinear Consols are—that it is situated in one of the richest mineral districts in Cornwall; is in immediate proximity to and surrounded by numerous mines of known productive character; that the samples of ore raised are uncommonly rich; that the yield of silver from the gossan will return an early profit; and that the formation of the sett and the adits already driven, aided by the prosecution of the Roseworthy Wood Adit, render the mine capable of being economically and efficiently worked without the use of expensive machinery.

The capital of the company is £15,000, divided into 3000 shares of £5 each; £3 to be paid at the time of subscribing, and the balance called for by instalments of £1 each, with one month's notice of each call.

Applications for prospectuses and shares may be made to the directors, at the office of the company, 2, Upper Wellington-street, Strand; but no application will be entertained unless a deposit of £1 for each share applied for be previously made with the bankers of the company, or be remitted in the letter of application.

**SLATE.—THE BANGOR ROYAL SLATE COMPANY** have now

ON HAND a large assortment of ROOFING SLATES, BLUE and GREEN,

the usual sizes, which they are prepared to SUPPLY on the usual terms, for shipment from their depot at Bangor, or to transmit by railway; also, SLABS of all sizes.

Orders to be addressed to Mr. EDWARDS, manager, Royal Slate Quarries, Bangor.

**SLATE SLABS AND ROOFING SLATES.**

THE PROPRIETORS of the NEW MACHNO SLATE and SLAB COMPANY (LIMITED) have, at great cost, made arrangements to convey their produce from their quarries near Plettington to Conway, to obtain the great advantage of access to the railway, giving them the facility of executing orders without the slightest delay. They trust that making Conway their shipping port will not cause them to be confounded with those hitherto known as the CONWAY SLATES, as the MACHNO SLATES are ENTIRELY FREE FROM PYRITES, or any metallic substance liable to be oxidized, and are, in fact, tested in Wales for at least half a century, and are found to attain a degree of hardness by exposure to the atmosphere, unknown in any other vein. The MACHNO SLATES are too well known to need commendation, but annexed valuable testimonials from Mr. Magnus, and also a strong chemical test to which they have been subjected, will better explain their quality:

*Pinnacles Slate Works, Upper Belgrave-place, London, April 7, 1855.* GENTLEMEN: I very readily offer my testimony to the excellence of your slates raised at the Machno Quarries.

I prefer them to all others obtained in North Wales, with one exception, and that is: much of the same quality as the Machno. The slabs can be obtained of large sizes, and of every requisite thickness. They are homogeneous in texture, strong, and give out, free from spots and other impurities, pleasant to the touch of the hand, easily planed and mounded, and will bear exposure to a much higher degree of heat than slabs from any of the Carnarvonshire quarries.

Signed, G. E. MAGNUS.

To the Proprietors of the Machno Slate and Slab Quarries.

*Liverpool, Oct. 18, 1855.* DEAR SIR: The experiments which I have tried on the specimen of slate, in reference to its capability of resistance to acids, enable me to pronounce it in every way capable of retaining boiling vinegar, without injury either to its own substance, or to the contained vinegar. A piece of the slate, weighing 95 grs., was exposed for 26 hours to the action of solid strong nitric acid; it was then boiled in the same acid for 30 minutes, and when washed, dried, and weighed, was found to have lost perceptibly in weight. This I consider the most conclusive experiment.

Signed, GEO. C. HUSON.

Wm. Orme Carter, Esq., Machno Slate and Slab Company.

All communications must be addressed to the resident director, Mr. T. H. WHEELER, Conway, North Wales.

**SPIKES AND FISH BOLTS.**—Prices and detailed information,

with respect to HOPPER'S PATENTS AND IMPROVEMENTS IN SPIKES AND FISH BOLTS, will be forwarded on application to Mr. Geo. HOPPER, Houghton-le-Spring Ironworks, and Britannia Ironworks, Fence Houses, Durham. Thousands of tons of the above have been made at these works during the last ten years, for most of the principal railways in England. A liberal allowance to exporters and commission agents.

**PATENT OFFICE.**—Messrs. WISE and CALLEN, CONSULTING

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ALL BUSINESS relating to BRITISH and FOREIGN PATENTS. Working and

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**NEW PATENT ACT, 1852.**—Mr. CAMPIN, having advocated

a Patent Law Reform before the Government and Legislature, and in the pages

of the *Mining Journal*, &c., is now READY TO ADVISE and ASSIST INVENTORS

in OBTAINING PATENTS, &c., under the NEW ACT.

The Circular of Information, gratis, on application to the Patent Office and

Signs' Registry, 146, Strand.

**STRUCTURE OF THE PRIMARY ROCKS, AND THEIR**

**METALLIC PRODUCTIONS.**—(Concluded.)

Mr. Evan Hopkins observed, in reply, that the object of his paper was

not to invite theoretical discussion on the origin of rocks and their metals,

or to create personal altercation amongst those who upheld different systems

of geology, but to give to the Institution the result of his observations,

made in different parts of the world, and accompanied by such facts,

and real sections, as should substantiate his statements. His object was

to represent the true conditions of the primary series, founded on very

long, extensive, and laborious experience, showing the value of such know-

ledge to the profession of mining engineering. Unfortunately, it was too

much the fashion to make observations and geological sections to suit

favourite systems, rather than to endeavour to represent the actual condi-

tions of the rocks. Practical geology, founded on experience, was of

much greater value in mining than the knowledge acquired by mere lec-

tures on the theoretical sections.

The direction and angular position of the primary cleavage planes had

also a very important influence on the faults and dislocations of mineral

veins and coal seams, which so frequently embarrassed the mining engi-

neer, and thus showing the necessity of studying the laws of structure in

the field. It had been remarked (by Mr. John Taylor) that the rocks in the

gold districts of Virginia did not present a vertical structure. He

(Mr. Hopkins) had not himself surveyed the gold districts of the United

States, but he could furnish extracts from the reports of others which, he

trusted, would be sufficient to show that the rocks of that region did pre-

sent a vertical structure, notwithstanding Mr. John Taylor's statement to the

contrary.

Messrs. Andres del Rio and Mr. Millington, in their report on Virginia,</



No doubt, before this lode was tapped, it produced hot water; but here is substantial

No doubt, before this lode was tapped, it produced hot water; but here is substantial

No doubt, before this hole was tapped, it produced hot water; but here is substantial evidence that it was not produced by any interior heat, but there and then.

I next turn to Bungy adit, St. Agnes, which is driven from the sea for a mile in, under St. Agnes Beacon. The first portion of it is through a dense clay-slate, and the inner portion is in granite. A short time since, I went into it, but there was no

There is an adit driven a long distance into Carnarvon Hill in granite, nearly under the summit, but no one can complain of its being there.

It is a remarkable fact, in all lodes I have been in, if a person wishes to sit down, he endeavours to get a piece of wood of bison, as thousands are now suffering from diseases brought on by the coldness of the rock they have had to contend with. Let a level in a mine be at what depth it may, and at a distance from a highly mineralised lode, a man in the dark, or by any means prevented from work, will become cold and torpid. It is only by the man's own exertions that a level appears to be warm; but let him leave it, and on his return next day, he often remarks it has cooled down. I have observed what I have just said in all the lodes of the district, which is not an indication of a gradual increase of temperature, but quite the reverse.

I am not yet satisfied that any instruments hitherto used are such as will give the real increase or decrease of temperature at these depths, amidst rarefied air and different gases. For anything we know, they may be as much out of their element as man himself when he gets there. Neither am I inclined to think there is a hot spring in the world but what might be traced to its mineral source. There is no proof of rock in the earth ever being hot enough to become a liquid, further than those mineral masses that have been spontaneously taken fire, the depth of which may be termed subterranean, and only to be compared with our hot lodges.

I beg to ask, what evidence can be brought against me from our deepest mines to warrant our coming to the conclusion that any portion was ever in a hot or fluid state I say, none. I admit that, in lodges near the surface, we may often see large, black, cinder-like stones; and I have heard hundreds of men remark that these must have passed through a strong heat to have caused them to be run up together in this way when a moment's meditation would have shown them that these cinders are only an accumulation of gases.

It is true, in our deepest mines, all these black, cinder-like stones disappear, and become a compact crystalline mass. If the heat increased as we descend, we should find these stones at the deepest point. If we were to take such phenomena for our guide, we might conclude that it was only the outer crust that was partially melted.

Probably some mining friend will show us how combustion can be kept up in the interior of the earth without air. Are we to suppose it aided by nitre, and burning without air? Even then, from whence does that supply enter I—as no fire can come from the surface, and no air can be drawn down to the depth of the strata, we must enter into our deep mines. I have said before, that air can penetrate half a mile into the undisturbed portions of the earth, or be mechanically drawn five miles after a spontaneous burning mass; but neither furnishes us with even the slightest evidence as to the interior of the earth being now, or that it ever was, a melting mass.

If some friend will show us that there is reasonable ground to suppose the earth to be a great self-acting galvanic battery, throwing all its secret force direct to the centre of the earth, we should even then pause before we come to the conclusion that it is mass of fire. Admitting that it is, the metallic substances would not then arrange themselves according to the law of gravitation. Our common smelting-furnaces give us convincing proofs that the most ponderous substances would fly off in gas. Thus it is that we find the heaviest metals near the earth's surface. If some one would give us sufficient proofs to establish this theory, it would extensively enlighten the

I have not a doubt but the earth is a great self-acting battery, bearing on its centre and causing a continual chemical action, but not such as to keep the interior in melting state; and once to have gone beyond its bounds, so as to melt the whole mass. For it is in fact clearly proved the earth is animated, and continually undergoing changes, without which nothing could exist.

I have before observed, that I believe no metallic or mineral substance settles down and becomes crystallised until it comes within the range of the oxygen of the air. By way of proof, let some one examine our deep mines a-refully, from the surface down to the deepest point, and see what amount of air and water each portion of the lo contains, observing whether it increases or diminishes in depth.

It is the duty of all our professional men to carefully investigate these points, when their discoveries could be handed down to future ages.

N. ENXON.

*Trilicconthe, Aug. 21.*

## INSPECTION OF COAL MINES

SIR.—Upon a new inspector being appointed to such districts as those of Stafford

shire or South Wales, without previous detailed knowledge, he may stumble on f

years without ascertaining which of the collieries most demand his visitation and suggestions. I, therefore, submit that great advantage would accrue from the issue

of a circular demanding a return embracing the following, as well as other peculiar information demanded by the district:—viz., 1, number of working pits; 2, area

upcast and downcast in each pit; 3, standard size of an air-course; 4, any, and what artificial ventilating power; 5, dimensions of furnace; 6, attendance upon furnace

7, nature of stoppings and brattices; 8, number of doors; 9, pit worked by proprietor or contractor; 10, amount of principal air current; 11, if worked by raised fan.

These returns would undoubtedly point out to him the chief circumstances attending

ant upon each colliery, and enable him to judge in which quarter to direct his immediate attention; for had the real circumstances of Gummer's Colliery in South Wales,

Lord Ward's Colliery, in Staffordshire, been made known to inspectors, there can be no doubt that such steps would have been taken, and that some

no doubt that such steps would have been taken as to have saved so many valuable lives.—*Newcastle, Aug. 28.* ————— A PRACTICAL MAN.

✓ USING SALT IN COKING COAL.

Sir,—I see my letter of the 16th, on the subject of using Salt in Coking, has brought

Out an angry rejoinder in yours of the 23d. I am neither in the coke nor iron trade and therefore shall not have the trouble of meeting the saline, carbonaceous waters.

in the legal arena. I hope, however, with your permission, to prove that there is novelty in using salt to seal through the pages of your Journal, and with that -

shall again trouble you with a few remarks on the subject, and should hope that some of your readers and correspondents will likewise favour the public with views

information they may possess on the subject. I think the use of salt for purifying iron

*Golden Hill, Stoke-upon-Trent, Staffordshire, Aug. 25.*

THE COPPER TRADE

Sir,—Your correspondent gives utterance to a gross absurdity when he says that

200,000*l.* or 300,000*l.* are necessary to carry on a copper smelting works, and what

opposed to every list in the trade. I can very well understand that a projector may find it good and convenient for himself to call up this large sum; but, for all leg-

mate purposes of the trade, I pronounce it to be unnecessary. It would sadly puzzle one's ingenuity to expend more than 10,000*l.* in erecting works capable of smelti

who was without a partner in the firm of Vivian and Sons, left an entire personal  
sworn under 200,000.

It is of what I say, and even show that some houses carried on a trade, respectable in amount, without any capital. As there cannot be a plainer position than that money can be reduced to the amount of credit used in commerce, I think

believe it.—3, *Gray's Inn-square, Aug. 26.* THOMAS IRVING HILL

SIN.—It is truly gratifying to see that the question of reduction of gold ore is lengthily attracting consideration and investigation in a properly scientific manner.

addition to the many which now exist, to defend scientific men from the reflections so frequently cast on them by ignorant "Practicals" (that is, theists) who have

thought." Much credit is due to your correspondent, Mr. W. Radley, for endeavoring to reduce the laws relating to the reduction of soldiers' intervals with their families.

In reference to "canon" No. 5, it appears to me very questionable whether it does possess the power of "varnishing" the particles of mercury. Any one who

of the metal—that is to say, to wet it. The repulsion between fluid mercury and water seems much the same as that which exists between water and oil. Gold

above 700° it evaporates. There are several substances common to gold ore, and

plates of iron, chlorides, formed by the addition of salt and plumbago, grease oil, from the machinery, &c.

lated to preserve the particles of gold in the granular condition in which they naturally exist, instead of reducing them to finer or lamellar particles.

## sites for the perfect reduction of gold ores, and very few of the difficulties which we

3. To the behaviour of mercury in the process of amalgamation, which largely

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economical question, whether the extra quantity of gold extracted by amalgamating the whole of the ore will repay the loss of mercury attendant on such a proceeding. In my letter of the 19th inst., I mentioned a case which bears directly upon the two last points—viz., the reduction of the gold ore of Morro Velho. The ore was pulverized to such a degree of fineness, that about 90 per cent. of the sand will pass through a sieve of 10,000 holes per square inch, and the remainder will pass through one of 2500 holes per square inch, yet only 5-8ths of the gold is liberated. Of this 5-8ths are extracted by amalgamation after concentration, and the rest of extraction only amounts to 2-3ths of 4-8ths of gold; but if we amalgamated the whole bulk of the ore, in order to extract the 5-8ths, the cost would be 16s. per 5-8ths of gold. Now, 1-3th of gold, of the quality existing in this ore, is only worth 7s. 10d. (for I should observe that the quantity of 1 oz. represents an alloy, composed of about 20 per cent. of silver and 80 per cent. of gold, so that the quantity of 4 8ths of gold, extracted from the ore only represents really 8 dwts. of pure gold). Thus we actually have a clear gain on the whole of nearly 8s., by losing 7s. 10d. worth of gold in the concentration, exclusive of the enormous extra cost which would be incurred by the manipulation and carriage of 240 tons instead of 3 tons. The process of amalgamation in barrels is, practically speaking, perfect. The grand desideratum to be discovered is a means of reducing the ore economically to a finer state of division, and of concentrating it afterwards into a smaller bulk, without loss of gold, previous to amalgamation.

30, Broad-street, Aug. 29.

WILLIAM BEAT, JUN.

#### ON QUARTZ CRUSHING AND GOLD EXTRACTION.

Sir,—Having seen in the last Number of your Journal a letter by Mr. Radley on Quartz Crushing and Gold Extraction, in which he has drawn up what he is pleased to call a Canon of Criticism, to which all discussion on the above subject may be referred, allow me to correct him on several points, which, if relied upon, might mislead others in any discussion that might hereafter arise.

Mr. Radley says (No. 3), "It is an essential condition to chemical action that one of two reactive substances should be aqueous or igneous fluid, and the other in a state of fine division." This was an old but long since exploded theory, and that fluidity is not essential to chemical action but a mere momentary reflection will prove. Thus, for example, among the reactions which take place in copper smelting, we have oxide of copper and sulphate of copper suffering mutual decomposition with the production of metallic copper and sulphurous acid, the reduction of oxides by carbon or carbonic oxide, deflagration of gunpowder, combination of dry chlorine gas with metals, production of ammonia gas by the action of lime upon chloride of ammonium, &c.

Again, in No. 4, "Mercury cannot be brought to a state of fine division by friction or trituration in contact with atmospheric air without a great degree of oxidation." All the best authorities (and I believe the statement to be perfectly correct) assert that mercury remains unaltered when agitated for any length of time in contact with atmospheric air, or even with pure oxygen gas.

The same remark applies to No. 6—"Trituration of mercury with any indifferent body in a wet state, at any temperature, and in contact with air, rapidly oxidizes the particles of mercury."

Again, in No. 19—"Gold exists like other metals in a mineralized state—i.e., as a chloride, bromide, iodide, fluoride, sulphide, arsenide, telluride, &c." This is a most extraordinary statement, and which the slightest acquaintance with chemistry or mineralogy would have been sufficient to show its utter incorrectness. Gold is never found but in the native or metallic state, and alloyed with silver, tellurium, and other metals.

The next error (No. 30) supposes, if possible, No. 19 in inaccuracy. Want of time prevents me from entering into a more lengthened criticism of Mr. Radley's letter; but, in conclusion, allow me to express my conviction of the complete fallacy of any summary to which discussions can be referred, more particularly on such processes as those of gold extraction, which depend principally on chemistry, as nothing short of the whole chemistry of this metal would be sufficient to commence with.—Kensington, Aug. 29.

CYANOGEN.

#### DR. COLLIER ON GOLD EXTRACTION, &c.

Sir,—The idea of propounding a code of laws as universally applicable for the extraction of gold from the substances with which it is found, is at variance with experience and philosophy. Nearly every district will suggest to the experienced skilled gold miner a modification in the particular mode of treatment; that which would succeed with one material containing gold would be incapable to another. I am not content with the sweeping propositions laid down by some of your correspondents—

1. Because they are not chemically correct.
2. Because they are not corroborated by experience.
3. I admit that gold is universally found in a metallic state. As to the ideal notion of its being found mineralized, we might as well expect to find nitrate of silver, biniodide of mercury, or any other compound which is decomposed by the action of the atmosphere, as to find in nature sulphuretted iodine, bromide, or any other rare laboratory condition of gold.

4. That in the preparation of the fine particles for the action of mercury, trituration is absolutely necessary. This rubbing action removes the film, or coating, which in most cases envelopes the gold particles, thus destroying their affinity for the mercury.
5. That sufficient amount of water is not generally used, more particularly in the only true and constant gold-bearing veins, composed of talc-micaeous slate, porphyritic felspathic quartz, and the ferruginous ochreous decomposed quartz; in these varieties a special mode of treatment will be suggested.

6. When the gold has been freed from the quartz or other materials with which it is contained, by fine reduction and trituration, it is in a condition to be submitted to the action of mercury, in moderate quantities. One great fault is attempting to use too great a quantity through the mercurial chamber; in this case not one quarter of the particles are brought into direct contact.

7. It is essential that the laws of gravity, as affecting the gold particles, should not be interrupted. The best method of ensuring a retention of these auriferous atoms is to use a sufficient supply of water during the amalgamation and washing process.
8. The mercury should not be kept at a temperature above 150°; nor should it under any circumstances be subdivided into small globules; in proportion to the subdivision is the affinity for the gold decreased.

I am now about employing, in New Granada, the following mode of extraction:—The stuff is reduced to a very fine state by my patent crusher and triturator. It is then conveyed by a launder to my new centrifugal amalgamating and washing pan; this apparatus is 6 feet in diameter, having a rise from the internal centre to the circumference of 1 inch to the foot, and is made to revolve at a slow speed. The reduced ore is carried to an upright tube placed in the centre of the basin, over a well which contains mercury, into which it dips about 1 in.; at the lower end in the mercury is a fine wire gauze of 200 meshes to the square inch; the stuff having previously passed through one of 3600, there is no danger of its caking or clogging, as at no time is there an accumulation of the sand in the basin.

By this extremely simple arrangement it is obvious that the most perfect washing process is attained, with the certainty of all the particles being subdivided when in collision with the mercury. The great difference of density between quartz and mercury prevents the latter from ever coming in direct contact with one quarter of the particles; this is one of the principal causes of failure in gold extraction. I will also ensure the concentration of the auriferous pyrites to be submitted to subsequent treatment. By careful washing in small quantities, at least four-fifths of all the gold can be extracted without mercury; this I have repeatedly proved, by testing the residue. But the great difficulty is to find persons who are sufficiently skilled in this process to carry it on to a large scale; after a time they become careless.

When the pyrites is exposed to atmospheric action, and gold re-extracted, it is not that any chemical action has taken place in regard to the gold itself, but merely the decomposition of the sulphur from the iron, liberating the concealed particles of gold. The ore in the first place being finely levigated, calcined, and mercurialized, I doubt if, on exposure for a century, any more gold could be obtained therefrom. The great advantage I claim, which time has proved to be correct, in my pulverizing and triturating machine are—

1. The constant uniform contact of large surfaces to each other.
2. There being no fixed shaft allows of the free action of the slide, or rubbing action, at each vibration of the machine.
3. The ease with which the worn parts can be replaced, by hard white iron shoe-plates; these are portable, and when readjusted, which requires only a few hours, the machine is ready for any other work equal to new.
4. The small amount of power expended, as compared to the stamps, or Chilli mill, with the amount of work done.

I have lately made large shipments to Australia of these machines, which I am confident, for great economy and simplicity, are unsurpassed. It must be remembered that my machinery has never been shown in London; the only machine erected in England was at Messrs. Ransomes and Sims's, the manufacturers, where only a few persons saw it at work. Among this number was Mr. John Taylor, Jun., who unhesitatingly pronounced it the most perfect and practical machine he has seen; the only objection he made was the weight of the parts. This difficulty has now been removed, by making a segment of the rollers with the shoe-plates referred to; no part now weighs above 12 cwt. It is estimated that the cost of wear and tear will not exceed 1s. per ton, each set of shoes being capable of reducing at least 600 to 700 tons, at a cost of 20s. I hope to leave England shortly for New Granada, to superintend the erection of the machinery on my mine, when a semi-monthly report will be forwarded to you for publication. The Fort Bowen has only now received my machinery for their mine. I have again tested their refuse or tailings, and found 100 lbs. of silver and above 2 ozs. of gold to the ton. The enormous loss the shareholders cannot be estimated. Their present manager is totally unfit to hold so responsible a position. When he left England, one year since, the shares were 5s.; now they are 2s. 6d.; nor would I give 1s. as an investment. Had the silver and gold been saved, they would have been at a premium; still this person is retained, at the extravagant salary of 750s. a year! I have great hopes that Mr. Paul, who lately left for these rich mines, will invest some energy, life, skill, and economy into its management; for hitherto it has seemed as if this mine, so wonderfully rich, should have been doomed to the most ignorant management for it would be impossible to find the like anywhere. Only last mail we are told that the gold could not be sent home, because there was no time to distil the amalgam. It must be a large mass to require even two hours to distil!

How the directors could leave so inefficient a person in charge so long I cannot understand. Next January, Mr. Tournier and myself will be extracting double the quantity of gold and silver at one-tenth the expense;—mark this! The Fort Bowen and the Helen Mines are on the same vein, only separated by the Helen river. Without economy and skill, no matter how rich your mines, it will ruin all concerned. I am afraid such will be the fate of the Fort Bowen, for the shareholders will not subscribe any more money.

I cannot close this communication without referring to the Utopian notion entertained by some—that of employing solvents. Theoretically, it may appear feasible that soda, potash, and fluorine, may dissolve silica, of which fact there can be no doubt; but its practical application at the mines is of the question, not only from the expense, but from the heterogeneous character of the material, containing, in many instances, hardly any silica. This, with the rich deposits of gold and silver ore, is considered extremely rich, if it will uniformly give an average 1 oz. per ton—that is, 1 oz. of gold to 35,000 lbs. of rubbish. It seems to me like looking through the small end of a telescope, to transport 400 miles all this refuse, which could be effected so much cheaper on the spot. The excuse that fuel could not be obtained in Virginia is so curious a fact, when that country abounds in coal mines equal in extent to any found in the north of England; these have been worked successfully for many years. But no! until all the gold mining companies have spent the money in their possession until they become convinced of the errors of their ways. Where are the Agua Fria, Gold Hill, West Maricopa, Golden Mountain, Carson Creek, Ave Maria, Nonvau Monde, Quartz Rock, &c. &c. Certainly, the fate of these ought to admonish the few lingering existences. But no; there seems to be a fatal blind disposition to run headlong into the same infatuated and destructive course.

It is notorious in California that the great majority of private gold mining enterprises succeed, but the moment they are converted into a public company the most reckless extravagance commences. In the years 1850-51-52-53, I was in California. It was laughable to see the pompous airs and extravagant outlays of the staff sent out to represent companies formed in London. The principal manager spent the majority of his time in San Francisco, some 150 miles or more from the mine, and the rest

did just as they chose, without regard to economy or skill, the only extraction of gold being from the shareholders' pockets. I ask again, Where are they all now? Peace to their ashes.—3, Park-road, Regent's-park, Aug. 25.

R. H. COLLIER, M.D.

#### ON QUARTZ CRUSHING AND GOLD EXTRACTION—WHICH IS THE BEST MACHINE?

Sir,—The complete failure of the inventions of Berdan, Perkes, and others, as gold crushing and separating machines, of which ample evidence, both public and private, has reached us from California and Australia, renders it unnecessary that I should notice these machines in comparison with the Canon or Carrion, given in your last Journal, otherwise than to make a passing allusion to the causes of their failure, for behoof of others interested in the success of gold extraction, or that may be inclined to, or are on the eve of patenting spurious or real inventions, in this walk of life. The failure of Perkes's and other machines is mainly referable to the causes set forth in the 10th and 11th articles of the Canon of Criticism, as being constituted of "rollers, or varieties thereof," always working in the same juxtaposition to their bearing and contact surfaces; whilst that of Berdan, failing from the influence of similar causes, was a source of failure in a greater degree against the 11th article, and additionally the enormous waste of power caused by the necessity for driving or moving, not only the basin, but also the grinder proper, the former six or seven times the weight of the latter, and the whole incongruous function doing only the duty of one-seventh of the power expended, with a bad, because incomplete and inefficient, performance.

As to the process of extraction of the contained gold, an additional failure is entailed upon all three machines, by a non-observance of the truths inculcated by articles 4, 5, and 6, which is likewise the main defect in Berdan's, lately in use by Symonds and Fell at Millwall, but now *hors de combat*, and the unfinished patent by Jones, lately made and used by Mr. Marshall, engineer, of Bishopgate-street Without, upon Chancery-lane gold quartz, the best corroborative proof of which consists in the fact that from the tailings of Jones's machine and process of amalgamation I have, by my patented process, obtained 0.75 ozs. per ton of gold, and from that of Berdan 0.05 ozs. per ton, a result principally due to finer grinding, obtained partly by my particular mode of grinding, and partly by a recognition of the truth and observance of article 13, and to the first part of article 16, Jones's tailings contain 4 per cent. of metallic and 3 per cent. of oxide of mercury, and those from Symonds and Fell about 1/4 per cent. of metallic and 3 per cent. of mineralized mercury, incurred by the operation of articles 4, 5, and 6.—Aug. 27.

#### AIR v. STEAM.

Sir,—With reference to my letter of Jan 23 last, want of means prevents me showing my locomotive on the common road; but any one, on seeing it working, will feel satisfied that steam will be superseded by air. The speed of the air-engine is brought up by means of 4-feet wheels working with 2-feet wheels on the crank-shaft, and connected by pitch-chains; and in order to gain leverage power, a 2-ft. wheel on the crank-shaft works by a pitch-chain, with a 4-feet wheel, on the shaft of the driving wheel.

It will be obvious to practical engineers that, while by this arrangement the increased speed of the fly-wheel will render the power of the air-engine more effective, the power of the men, being applied to the slow motion, will likewise be more efficient in assisting a locomotive to ascend an incline, or to overcome the resistance caused by contrary winds, when steam, as applied to vessels in like circumstances, is blown off at the safety-valve, and the vessels, in many cases, are compelled to seek the nearest port for safety. I have now proved the applicability of my patented principle to unwatering and purifying mines by compressed air, on the plan of the spring air-gun.

I have in the experiment at said workshop used the power only of half of my largest engine (7 in. in diameter), and yet forced an inch of water to rise 100 ft. in the present fire-engine can do with 30 men. In this arrangement there are only three valves, one at the air-engine, another at the suction pipe, and one at the rising main, which is a lead pipe of 3 in. The suction-pipe is about 1 foot long, and 2 in. in diameter, and has two valves of 1 1/2 in. (leather); the air from the engine forces the water into the rising main, and the exhaust stroke of the air-engine gives time to the suction valve to open and supply the water forced up the rising main. The advantage of this plan must be obvious to practical engineers.

By the fire-engine, the men at the pump have the whole weight of the column of water to support; but by using air, they are relieved of this weight, the water being forced upwards by the compressed air, in short, itself-loads, and forces water balls instead of lead balls, as in the case of the spring air-gun.

It must be obvious to practical engineers, that were the principle applied to steam-boats or sailing vessels, &c., a more powerful impulse can thus be acquired than by the present fallacious system of working steam expansively; and were a small vessel of about 30 gallons of water fixed to the mast, a sufficient impulse could be obtained to make the air-engines self-acting, as well as the steam-engines, and save the expense and room for the coals.—Leith, Aug. 26.

G. GOODALE.

#### BRITISH MINING.

Sir,—The mining market, during the present week, has assumed a more healthy tone, and, on the whole, a very fair amount of business has been done. Good discoveries in some of the principal mines having caused a demand for the shares, and the very able leading articles in your Journal, during the past few weeks, we have no doubt, has assisted in giving a more healthy state of things. These articles should be attentively read by every one interested in the welfare of British mining, as they clearly show that home mining, while it tends to employ a vast amount of labour, can, with proper care, be made profitable to the investors. For ourselves, we thank you for the interest you have taken in the matter, and trust that your able pen will succeed in placing the merits of legitimate mining fairly before the public.

5, Hercules-chambers, Old Broad-street, London, Aug. 26. POWELL AND COOKE.

#### BOSWORTHEN MINE—WINDING-UP.

Sir,—As the transactions relating to this mine are now the subject of judicial investigation, we should not have offered any observations on the matter, if Mr. R. B. Michell had not, in his late letter in your Journal (to which our attention has now been called), made statements likely to mislead your readers, and in the correctness of which we, as the solicitors for the petitioners, cannot acquiesce. We shall strictly confine ourselves, however, to a few remarks on Mr. Michell's statements.

Mr. Michell was one of the grantees of this mine, and the shares appear to have been appropriated in September, 1852, 300 standing in Mr. Michell's name from that time until February 19, 1853, when 100 were transferred by him into the names of Messrs. Watson and Ennor. Mr. Michell attended a meeting of the adventurers on October 17, 1853, took a prominent part in the proceedings, and signed the cost-book, but we never heard it alleged, until the publication of Mr. Michell's letter, that any notice of relinquishment had been given by him to Mr. John Richards on that day. We find, however, that, previously to this meeting—viz., on October 8, Mr. Michell transferred shares (the entire number then held by him in the mine) to Mr. John Richards, who also transferred 10 shares to Mr. Michell, so that Mr. Michell then held October 13, 1853; and a transfer from Mr. John Richards to Mr. Michell of the same number, dated December 21 following.

The purser's cash-book and adventurers' ledger have not been produced, and it is alleged that none such were kept.

Mr. Michell, as we have stated, was one of the grantees of the set; and as soon as it was known to us that he intended to sell the roofs, doors, windows, flooring, &c., of the buildings, and some months before they were removed, a written notice not to sell or remove them from us was given to Mr. Michell, and to prevent all possibility of misapprehension, he was then furnished with a copy of the covenants relating to the buildings. We declined to refer any question as to the legal construction of these covenants to an arbitrator, but we offered to refer the amount of damages; and the adventurers, by a late resolution in the cost-book, at a meeting at which Mr. Michell was present, directed a valuation to be made of the damage done by the improper removal of the roofs, doors, windows, &c., and their own value fixed the amount of such damage at 97s. (the sum claimed by Mr. Marrack). 100s. per acre was made payable by the lease for land destroyed, and the difference between the 107s. claimed and the 97s. 10s. awarded arose simply from arrear made in the original measurement.

If, as Mr. Michell states, the books of the company show that each of the petitioners are defaulters, they also show, so far as Mr. Marrack is concerned, that he has not been credited with the amounts paid by him; and when these errors have been corrected the result will be different. Into the question of Mr. Michell's liability to contribute as a shareholder, and his reasons for opposing the petition, we shall not, for obvious reasons, now enter, merely observing that it does not appear, and is not pretended by him, that he had the authority of any meeting of the adventurers to sanction the opposition.—*Truth*, Aug. 31.

HONORABLE HOCKIN.

#### WHEEL EMMA.

Sir,—“Q. S.” in his letter of Aug. 30, and inserted under the head of Notices to Correspondents in your Journal of Aug. 23, states the mine is “without machinery,” meaning, of course, this mine, as the article is headed, “Wheel Emma, Buckfast.” We also find at all surprising a statement from “Q. S.” any more than at many others he has made, equally truthful.

I am very much mistaken if this veritable “Q. S.” is not one of a clique who have been trying their hands at first “planting ore,” and next “planting shares”; but the latter not having succeeded, I do not wonder at their being wrathful, after all the pains they took to imitate Nature.

“Q. S.” in one of his letters, remarks that “good wine requires no bush.” Now, Sir, we never issued a prospectus; we had recourse to no published reports at the commencement; but some reports obtained from mining agents of known character and standing by gentlemen of their business character, were by their consent published, and this was done in every instance, where such reports should be obtained. I regret, however, that some shareholders would not permit the agents inspecting them to give their report.

After we commenced sending the resident agent's reports to your Journal, there was an intention to continue them; but sundry anonymous false statements appearing, week after week, in your columns, after you were waited upon by a gentleman who a shareholder residing in London, and of known respectability, and by whose authority you were requested to contradict the statements, it was considered by the shareholders so contrary to what they had a right to expect, that they requested the resident agent's report should not be sent to your paper for the future.

As regards the statement, “a mine without machinery,” I may remark that the whole of the machinery to work this mine to a considerable depth is erected, and in operation, all worked by water power for pumping, crushing, and draining. The adit level is driven on the course of the lode 99 fms., with a lode throughout, which we are told by competent authorities is not surpassed, if equalled, by any adit level in the two counties; 81 fms. 3 feet is west of the engine-shaft, and although our mine is only about twelve months old, this adit has produced 2900s. worth of ore, and there is not 1 fathom of this adit west of the engine-shaft without ore; 40 fathoms 2 feet of which the lode consists of fluor-spar and ore, upon which we have not commenced stopping, as we are waiting the communication of a western shaft, which will be completed by the end of another month, 80 fms. west of the engine-shaft. I may add, the adit is still in fluor-spar and ore, upwards of 5 feet wide, where the depth of the adit is 24 fms. from surface. We have a 10 fm. level below adit driven 47 fms., with a rich lode for several fathoms in length, and large throughout, in some parts as much as 10 feet wide, which we invite any shareholders or their agents to inspect. Our engine-shaft is now 11 fms. below the 10 (and which is a depth of 40 fms. from surface), and at this point we have a branch of rich grey ore from 8 to 10 in. wide, and a stone of yellow ore in the other part of the lode that we are carrying in the shaft; while the whole of the main part of the lode that carries the ore in the upper levels is standing to the north of the shaft unopened. A winze is sunk from the adit to the 10 through a good lode. An air-shaft is sunk from surface to adit 49 fms. west

of engine-shaft, and nearly the whole of our surface erections are completed for vigorously working this mine, in the carrying out of which we do not intend, any more than yourself, to be dictated to by “Q. S.” or any of his clique.

Aug. 27.

CHRISTOPHER BOWEN, FURNACE.

#### BRYNGLAS SILVER-LEAD MINE (CARDIGANSHIRE).

Sir,—The arrangements for the formation of a company to re-work the above mine being now so far in advance, all the preliminaries having been agreed on, and a large proportion of the shares already secured, it may not be uninteresting to your readers to say a few words on the mineral character, and its past and future prospects. This mine is situated in one of the richest lead districts of Cardiganshire; it is twelve miles from the shipping port of Aberystwyth, and close to the main road leading to Kingston. This mine has been worked several years; several rich veins of ore have been laid open, which now can be worked profitably, it only requiring machinery to do so, there being an abundance of water available for any purpose required. Having an occasion some few days since to be near the above mine, and previously having heard such flattering accounts, and the most sanguine manner in which it was spoken of, I was induced to give it a call, which I did, and there met with Messrs. Davies and Francis, the promoters of the undertaking, and the resident agent, Capt. T. Owens, by whom I was received in the most courteous manner. Captain Owens, with Messrs. Davies and Francis, kindly accompanied me through both the underground and surface department. I felt really surprised that the former advertisement had so hastily given up such a valuable undertaking: allow me to add, this was not done, I find, for the want of machinery, the machinery at that time not being of sufficient power to keep the water; the result was, the mine was abandoned, the machinery sold, with the exception of a lift of pumps, which are still at the bottom of the engine-shaft. There are several adits, and there are several constructed shafts in passing through the levels in company with the above gentlemen, and I broke some beautiful stones of lead from the lode, which is 4 feet wide, running east and west, underlying north, composed of a most beautiful gosean, spar, and good lead ore, and I was told that there was a bunch of ore in the bottom of the engine-shaft, which now full of water, from 8 to 10 inches wide. I should advise the present company immediately erect machinery and unwater the shaft, and extend levels at the bottom, when, from present indications in the level above, the shareholders will be doubly at depth with profitable results.

I do consider, from the favourable indications throughout the Brynglas Mine, with the advantage of water power for any purpose required, the easy transfer of ore and materials, with the moderate royalty of 1-14th, that it is only a matter of machinery to place Brynglas Mine as a first-rate dividend paying concern.

I was much pleased with the manner in which this company purposes carrying out the undertaking, and the economy practised in all their movements. It is much to be regretted that the same rule was not always adopted in the general working of the mine. I am quite certain that the shareholders will shortly see the beneficial results arising from such judicious management as in this undertaking, which is not to be considered a mere speculation, but a simple and safe investment.

In conclusion, I beg to say that, with a small outlay for machinery, and if properly worked with perseverance and economy, Brynglas Mine at no distant period will stand high in the list of dividend-paying mines.

RICHARD HENRY YERKES.

Llanidloes, Aug. 25.

#### Meetings at Mining Companies.

##### WELSH POTOSI MINING COMPANY.

The half-yearly meeting of proprietors was held at the offices of the company, 26, Gresham-street, on Thursday, Mr. LORIMER in the chair.

Mr. WILKINSON (the secretary) read the notice convening the meeting, and the following reports:—

**DIRECTOR'S REPORT.**  
The directors of the Welsh Potosi Lead and Copper Mining Company, in presenting to the shareholders their report, with the balance-sheet, details of cost sheet, &c., refer with gratification to the progress made in the sales of ore; this, compared with the previous 12 months, shows a steady increase, and fully bears out the representations made at the last general meeting. The ore ground still holds good where fresh openings are made; and the improvements, by sinking winzes and driving levels (thus ventilating and improving the underground works, and laying open the ground), are steadily progressing. Machinery and pumps are also being fixed, and the water thrown back from the reservoir for driving purposes. This operation will thus be very much expedited, and its labour will not be unduly increased, by an inclined railway, a mile in length, for taking the ore from the upper drawing-shaft to the two dressing-floors, now nearly completed. The directors have in accordance with the powers given them at the last general meeting, entered into a contract with the Cambrian Foundry Company, Aberystwyth, for the erection of the necessary steam machinery. They very much regret that considerable delay has occurred in the completion of this contract, but look forward to its speedy fulfilment. There will be a great increase in the quantity of ore to market. The directors have not been able to avail themselves of the bettering prospects of the mine at the last general meeting, or to issue the shares requisite to pay for the machinery, but as the company will shortly be put under the Act of Limited Liability, the small amount of capital required to work the mine more vigorously may confidently be hoped for. The directors congratulate the shareholders on the gradual development and increasing prosperity of the undertaking. They challenge the most scrutinizing enquiry into their conduct in the management of the concern, and, relying on the opinion of competent persons, with their own knowledge, look confidently forward to a speedy return and large profits to those who have embarked in it.

**MANAGER'S REPORT.**  
I have much pleasure in bearing my testimony to the accuracy of your captain's report, as to the general detail and appearance of the mine. Our prospects are daily becoming more encouraging; and I can appeal with confidence to those directors who have lately minutely inspected the mine in company with me, to confirm my statements as to the increased prosperity of our undertaking. Had the contractor fulfilled his contract, to complete our steam-engines by the middle of July, our monthly sales would gradually have increased to 100 tons a month for the remainder of the year; as it is, we have sold, since the last account was rendered, ore to the value of £11s. 10s. making an aggregate amount of nearly 17,000s. since we commenced 2 1/2 years ago only—a fact, I may venture to say, considering the circumstances of the case, unparalleled in mining adventure, to say nothing of the increased quantity of ground we have laid open for immediate operations. It must be borne in mind that labourers are very scarce, and that the tightness of the money market has been most disadvantageous to our efforts, being obliged to depend chiefly upon the produce of the mine, aided by the personal responsibility of the directors. We could not afford spending on capital account much that might fairly have been devoted to dividend; but you will eventually derive the benefit. The ore already reaping considerable advantage from the inclined railway recommended at the last general meeting. We have, however, much to do with a view to economise labour in every department. It is for the shareholders to consider whether they will raise the small amount of additional capital required; if so, I am quite confident we shall soon be able to pay a handsome dividend; but if this be not done, we must, as now, devote profits for the purpose. As long as I am honoured with your confidence, no exertion shall be wanting on my part to ensure the full development of what I may truly call your valuable property.—T. W. WILKINSON, Managing Director and Purser.

**CAPTAIN'S REPORT.**  
Escarpment.—No. 3 slope, back of adit west of footway-shaft, yields 1 ton of ore per fm. The slope in bottom of footway-shaft yields 1 1/2 ton of ore to the fathom, and improves in going down. No. 5 slope, in the back of the 10 fm. level, west of footway-shaft, yields 1 ton of ore per fm. No. 6, adjoining No. 5, yields 1 1/2 ton per fathom; No. 7, back of the same level, yields 1 1/2 ton of ore per fathom; No. 8 slope, back of 10 fathom level, west of old engine-shaft, is worth 1 ton of ore per fm. The pitch in the bottom of adit, west of same shaft, is worth 1 ton of ore per fm. The lode in No. 1 winze in the 10 fm. level, west of footway-shaft, is worth at present 10 cwt. of ore to the fathom; but the lode taking a dip more northerly than the west of footway-shaft, it is not able to arrive at its real value. Judging from the value of the lode at top of the winze, which is worth 2 tons of ore to the fathom, it is equally rich in the bottom. No. 2 winze in the 10, west of old engine-shaft, is worth 1 ton of ore per fm., and is greatly improved since last week. Escarpment.—The pitch east and west of bog shaft are worth 10 cwt. of ore to the fathom each.—MIDLAND MINES: In the cross-cut, south at Llyweddau, we have cut a branch of ore yielding 12 cwt. to the fm. so far as discovered, and from appearances expect a further improvement as it widens in going down. We are happy to state that the operation on the surface are progressing; the leets, having been repaired, are in good condition, and the weather for the last two months has been very favourable, giving a better supply of water, which has enabled us to keep the 20 fm. level dry, and the rest of the machinery at work. The inclined railway approaches completion to the lowest dressing-floors, which will effect a saving in the carriage of ore-stuff to the crushers of at least two-thirds the present cost, and enable us to dispatch four times the quantity we do at present. The steam-engines, we regret to say, are not finished; the loss incurred by this delay is considerable, as it prevents our returning the quantity of ore we are breaking, besides developing the mine and clearing the roads in the workings, &c., which is highly important to be done.—R. DUNN; T. GOLDFORTH.

A statement of accounts, from Jan. 1 to June 30, was submitted, from which the following were condensed:—

Dividends	£1370 0
Accounts outstanding, since paid	750 10 0
Loan repaid, North and South Wales Bank	1000 0 0
Interest and discount	144 15 0
Mine cost, Dec. to June	5538 0 10
Machinery	105 11 8
Balance at bankers'	273 11 3
Amount paid for gunpowder, to appear in subsequent cost-sheet	32 10 0 = £2324 17 8
Balance of cash last audit	23 17 6
Share capital	4072 13 4
Ore sold	4046 10 4
Loans	1370 0 0
Sundry unpaid current accounts	765 7 7 = £855 17 10
Balance due to purser	£378 10 8

The CHAIRMAN said, to invite discussion, he would move that the report and accounts be received and adopted.—Mr. BATES seconded the resolution.

The CHAIRMAN said, in reference to the report, he would observe that he was upon the mine last Monday week, both over the surface and underground, and was much pleased with the progress. The development of the works was going on most satisfactorily, and the lode was going through the mountain. Although there was not so much ore cut, it arose through the present captain only raising as much as he could dress and send to market without encumbering the levels, as the former captain did; and he would remind them that they might be considered at the present time as only scraping the surface, as comparatively speaking, they were at no depth. They were still going on with the necessary works; and, amongst others, were making a railway a mile in length, which would greatly economise the working. All the expenses had been paid out of the cost-sheet, which for June amounted to 572s., whilst the ore sold produced 850s., proving that, if they had not been spending money on the works which belonged to capital account, there would have been a considerable sum left for profit.

Col. FARNBORO wished to know whether the ore was really got in June? The CHAIRMAN said they had been selling every four weeks, and, therefore, they must have got it in June. It would be seen by the accounts the quantity sold in May so that it was clear that the June amount must be the June production.

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## Mining Correspondence.

## BRITISH MINES.

**ABBEY CONSOLS.**—E. Williams, Aug. 23: The eastern level is on the most promising lode, and the ground is hard, but not so wet as when last reported; the end at present is all covered with gossan and blende, mixed with lead ore, and it will yield, by its present appearance, 10 cwt. of ore per fm. The western level is still in good ore, and will yield 9 cwt. of ore per fm. No. 1 stopes, in the back of the same, will yield 9 cwt. of ore per cubic fm.; No. 2 stopes, 16 cwt.; No. 3 stopes, 12 cwt. of ore per cubic fm. The 14 ft. level is on a very kindly lode, producing some saving work, but the men are driving the level at present on the north part of the lode, and my opinion is that the ore is standing to the south of the level, and I have ordered the men to stop the south side of it, and I do believe that they will find a good body of ore, because there is excellent ore under them at No. 2 stopes, in the back of the western level. We are going on as fast as we can with the dressing operations.

**ALFRED CONSOLS.**—M. White, Aug. 25: The lode in Field's engine-shaft, sinking below the 140 fm. level, is without change to notice since the last report. The lode in this level, east of the shaft, is 2½ ft. wide, unproductive. No change in the 130 fm. level or the 120 fm. level, on the south side, since the last report. In the 100 fm. level, east of Davey's engine-shaft, we are carrying the south part in back for 4 ft. wide, which is worth for copper ore 60¢ per fm., and we think there is still 4 ft. of the north part of the lode standing, which we intend to have taken down shortly. The north lode in the winze, sinking below the 80 fm. level, east of this shaft, is worth for copper ore 80¢ per fm. The south lode, in the slope east of the winze, is worth for copper ore 120¢ per fathom. The lode in the slope west of the winze is worth for copper ore 80¢ per fm.

**ANGARRACK CONSOLS.**—T. Blamey, Aug. 27: Since last report, our progress in driving the adit level has been rather slow—ground at present hard; the lode is about 15 in. wide, very regular, composed of quartz, thickly spangled with yellow copper ore, mixed with muddle.

**BALLYVIRGIN.**—R. W. Smith, Aug. 21: The lode in the north end will yield about 2 tons of lead ore and 15 cwt. of copper ore per fm., and continues hard for driving. In No. 2 stopes, the lode will yield about 2 tons of lead and 10 cwt. of copper ore per fathom. The lode in the rise coming to surface will yield 1 ton of copper and 3 cwt. of lead ore per fm. In No. 1 stopes the lode will yield 2½ tons of lead and 3 cwt. of copper per fm. The shaft is cleared up below the 10 fm. level, and we are now taking away some ground which was left for the cistern; as soon as the men are shipping a cargo of copper muddle.

**B. W. Smith, Aug. 25:** Since my last report no change has taken place in the various ends and stopes, and all the work is proceeding satisfactorily. The shaft is cleared to the bottom, and to-day we shall take the lift on to the screen, to shut away the ground which was left for a cistern, and drop it to the bottom, so that on Thursday we shall have resumed sinking the engine-shaft. I expect another vessel in Clare this week to load ore.

**BEDFORD CONSOLS.**—J. Hodge, Aug. 23: Our operations have been recently confined to the sinking of the trial shaft, in which the lode is still exceedingly promising, retaining its size and underlie; at no period have I seen it better. It is our intention to make this a permanent shaft, so that it may receive machinery as may be necessary, the shaft being 50 fms. nearer to where the wheel must be erected, it is necessary that the shaft be enlarged, a work which will be immediately proceeded with, as well as the necessary work for the erection of a water-wheel.

**BYNTAIL.**—J. Roach, Aug. 25: There is no material alteration in the character of the lode in the 20 fms. level reported on last week, it is still producing fine stones of solid ore. The lode in the 10 fms. level, in the back of the 20 fms. level, is 1 ton per fm. It appears from the dialling of the 10 and 20 fms. level, as well as from a part of the lode in the winze dipping north upwards of a foot per fm. more than we are sinking on, that we shall have, as soon as the winze is communicated, to drive a cross-cut at the 20 to intersect that part of the lode standing to the north of the level; at the point of its departure in the winze it contains very fine stones of ore. The winze sinking under the 20 has been without change since last week. No alteration of importance has taken place in the stopes.

**BUCKLAND CONSOLS.**—J. Carpenter, Aug. 27: We are sinking on the south lode; it continues its former size and character—from 15 in. to 2 ft. wide, with well-defined gossan, prisms, muddle, and spotted with copper ore. I have put men to eastward further north (now the corn is cut), to ascertain whether more lodes are north of those we have already discovered, and prove the ground east of great cross-course.

**BUTTERDON.**—T. Grenfell, Aug. 27: The engine-shaft is sunk 3 ft. below the 45 fm. level, the lode is 1½ ft. wide, composed of fluor-spar and lead ore, more or less interspersed with yellow copper ore and muddle throughout. The lode possesses every feature in common with the lode in the best lead mines in this district; and were we to meet with a change of ground, I have not the least doubt of its proving very similar in productiveness to the mines in question.

**BWLCH CONSOLS.**—R. Northey, Aug. 23: The stopes in the back of the 27 are not so well as last reported. The stopes in the back of the 40 are just the same, except No. 2, which will not produce more than 15 cwt. of ore per fm. The 40 end is in more settled ground, but no ore to value. The 30, west of shaft, is looking a great deal better. I have set a cross-cut to drive north, which is about 4 fms., and we have cut several branches of solid lead ore, varying from ½ to ¾ in. wide; we have cut through it 9 ft. wide, and have not yet reached the north wall; this is a decided improvement. I have now anything like a lode in this part before, but must open a few fathoms before we say much about it, as we are only now driving a cross-cut through it, but this looks well for the ore gone down in the 40, west of shaft; the bearing is the same as the caunter. The 27, driving west, is a little better; the lode is 30 ft. wide.

**CAMBORNE CONSOLS.**—Wm. Roberts, Aug. 25: In the 20 west, on the caunter, the lode is 1½ ft. wide, very promising, with good stones of ore. In the 10 west, on ditto, the lode is 1 ft. wide, producing stones of ore.

**CARADON CONSOLS.**—Wm. Rich, Aug. 26: The sinking of the flat-roof shaft is suspended for the present, in consequence of the shaftmen being engaged cutting plat in a 28 fm. level, dividing and easing the shaft from the 14 to the present bottom, &c.; when this work is completed we shall resume the sinking as speedily as possible. I calculate we have about 14 fms. more to sink so as to effect a communication with the rise in the back of the 38. There is no material alteration in the 38 cross-cut north, and owing to the present hardness of the ground our progress is slow. There is no alteration worthy of notice in the 38 east, on the new lode.

**CAROLINE WHEAL PROSPER.**—W. Williams, Aug. 23: The ground in Williams's shaft is much of the same character as it has been; we are pushing on the sinking this shaft with all possible speed. We have taken down some of the lode this week, and find it to yield some good stones of tin.

**CARVANNALL.**—W. Roberts, Aug. 26: There is no alteration to notice since the report for the meeting held on the 18th inst.

**CARVATH UNITED.**—J. Webb, Aug. 23: The lode in the 30 fathom level, east and west is large and improving as we extend on it. In sinking a winze below the 20, nearly 20 fms. west of the 30 west end, we have a good lode for tin; this winze is down 8 fms. below the 20, which is quite dry, showing it must be a large porous lode to drain the ground for all that distance. The western part appears to be at present the most desirable for pursuit; there does not appear to be any doubt but that we shall have a good mine in that direction. We have the new plunger-lead keeping off the water very nicely, the engine at the first stroke per minute. Everything is in good working order, and the return will increase shortly.

**CLARA.**—S. Trevelyan, Aug. 27: The water that has been left in the mine for the last 12 months, in consequence of Rowland's stopping the wheel, is now drained out, and the shaft secured to the 30 fm. level, which we hope shortly to have down on the course of the lode, to communicate with the old men's workings, which are immediately above us; from the best information we can get, there cannot be more than 2 fathoms of ground in this place to hole; when this is completed two stopes can be wrought at once, one to the east and the other to the west of the rise, where from present appearance large quantities of ore may be expected; the lode at present in the rise is 3 feet wide, and will yield about 15 cwt. of ore per fm. The water is coming through the lode very powerful, and sinking in the old workings about 1 ft. in every 24 fms.; the depth of water is now 12 fms., which we hope shortly to have down. We are obliged to suspend the driving of the 20, west of the cross-cut, until the communication is effected, as the air is so bad as to prevent the men from working. The lode in the end is from 4 to 5 fms. wide, and will yield about 8 cwt. of ore per fm., with a very kindly appearance; this end is about 23 fms. west of the cross-cut, 15 fms. of which have yielded at least 15 cwt. of ore per fm. The old workings also continue to the east of cross-cut nearly 30 fathoms, and at the very extremity a branch of ore is to be seen as the water is sinking, which will turn out about 6 cwt. of ore per fathom, as far as has been seen. I should recommend the work being completed previously to the commencing of the engine at the level, as we shall be able to ascertain better the quantity of stuff that will regularly be brought through the shaft. I could not advise at present any alteration to be made relative to the water-wheel, although I know it is very small, being only 12 feet in diameter and 3½ ft. breast; it is of sufficient power to keep the water at the present depth, as the regular quantity it has to pump, exclusive of the draining of the old mine, is not more than four strokes a minute with a 9-in. box, which it is driving, and the wheel can comfortably perform 10 revolutions a minute, therefore you plainly see that we shall be able to get at present a new wheel, and a new shaft, and we will have the shaft, and have proved the lode 10 fms. deeper, as this can be done without the aid of pumps being fixed in the shaft below; then, should the lode in the 30 prove as productive as in the 20, a much larger wheel might be erected, with a crusher attached, but until the above-mentioned work be accomplished I do not see that such operations could be safely recommended. We have about 7 tons of ore clean; we have not added anything to it for the last fortnight, in consequence of the surface water being so slack, and was obliged to use the water, with all the rest we could get, to drive the wheel as fast as possible, while forcing the water out of the shaft and levels, but hope to commence dressing again in a day or two, and will get a parcel of ore for sale as quickly as possible.

**CLIAH AND WESTWORTH.**—J. Cudlip, C. Glasen, Aug. 23: Walter's engine-shaft is sunk 7 fms. below the 60; sinking by nine men, at 16¢ per fm.—Whitford's Lode: We have intersected this lode in the 60; it is a large champion lode, presenting very favourable indications. We have driven west on it about 8½—lode 4 feet wide, worth 15¢ per fm. for tin. We have commenced to drive east also; the lode is at present discovered by the cross-course, worth 8¢ per fm. for tin. In the end of the 30 west the lode is 3 feet wide, yielding good stones of rich tin ore. The stopes in back of this level are worth 10¢ per fm. for tin. The winze sinking below the 30, east of cross-cut, is driven 4 fms., lode 3½ ft. wide, worth 8¢ per fm. for tin. The 30 cross-cut, driving west, is extended 27 fms., which we hope shortly to have down two men and two boys, at 4¢ per fathom.—Julia Lode: The 60, driving west, is at present poor. The 50, driving west, is yielding good stones of copper ore. The stopes in the bottom of the 40, west of Walter's shaft, are yielding 3 tons of ore per fm. The 30 cross-cut, driving north from Mary Ann lode, is extended 42 fms.; driving by three men, at 7¢ per fm.

**COLLACOMBE.**—S. Mitchell, Aug. 25: The driving in the 62 west is discontinued for a few days, to admit of a rise being put up against the western shaft, which we hope will be held this week. About 4 fms. have been stepped in bottom of the 50, and the lode is still a very fine course of ore, worth from 30¢ to 40¢ per fm. About 5 fms. have been stepped in back of the 50, and the lode is still a good course of ore, about 5 fms. from 25¢ to 30¢ per fm. There is no alteration to notice in any other part of the mine.

**CUBERT UNITED.**—T. Richards, Aug. 23: The 76 is extended south from Trevelyan engine-shaft 15 fms. 2 ft. 5 in.; the lode in the last 5 fms. has produced, on an average, about 9 cwt. of ore per fathom, but for the present it is not so productive, worth now about 3 to 4 cwt. per fm. This level is extended north from the shaft 12 fms. 3 in.; the lode in the end is 14 in. wide, of a very promising character, with occasional stones of ore. The 76 fm. level is extended south from the pump-winze

3 fm. 5 ft. 5 in.; the lode here is opening larger, being now 1 ft. wide, of a very congenial character; however, I do not expect much improvement until we reach the top of the lode, the productive ore ground in the levels above. The 60 is extended south from Towsey's shaft 5 fms. 1 ft. 3 in.; the lode throughout this driving is of a very encouraging description, being about 15 in. wide, and has produced in places from 2 to 3 cwt. of ore per fm., and I have no doubt, from its very promising appearance, that as we proceed southward a great improvement will be the result. The stopes in the back of the 76, south from Trevelyan engine-shaft, will produce full 12 cwt. of ore per fm. The two stopes in the back of the 66, north from the shaft, will produce from 3 to 6 cwt. of ore per fm. The stopes, north from Towsey's shaft, will produce from 6 to 7 cwt. of ore per fm. We are getting on with our lead, raisings as fast as we can, and we shall probably, from all appearances, get ready for sampling 35 tons by Sept. 12, or perhaps a little more.

**CWM DAREN.**—P. Evans, Aug. 23: The lode in the 50 east is larger than when last reported, with spots of copper ore. The stopes in back of the 40 east is worth 5 cwt. of copper ore per fathom. The stopes in back of the 30 west is not so good for lead; the lode is much harder, and not looking so well for lead or copper.

**DAREN.**—J. Humphreys, Aug. 25: In Francis's level, in breaking down the lode, which is about 4 feet wide, we have come to some small branches of lead, which we have every reason to believe will improve, and produce ore in valuable quantities. In Oliver's level we drove about a fathom on trial, and have found some very good branches of lead, and we are likely to set a pitch on tribute. All the pitches are looking well, and the tributers are satisfied with their earnings.

**DEVON BURRA BURRA.**—J. Lord, Aug. 28: The sinking of the shaft is being carried on as usual. No change since last reported. The shaft measured last Friday (Aug. 22) 33 fms. Price given for the ensuing month, 9¢ per fm.

**DEVON WHEAL BULLER.**—W. Neill, Aug. 28: The engine-shaft is now 11 fms. 4 ft. below the 32 fm. level; the ground is still very favourable, and of the most promising character for producing copper ore; we have about 2 fms. more to sink before we expect to intersect the lode. In the 32 fm. level, driving west, the lode is 2 feet wide, yielding 1 ton of good ore per fm.; a very promising lode. The rise in the back of the same level east is holed to the 20 fm. level, which will be of great advantage to our future workings, both for air and stopping the ground. The lode in the 20, driving east, is 1½ ft. wide, yielding 1 ton of good ore per fm. The stopes in the back of this level is yielding ½ ton of good ore per fm. The stopes in the bottom of this level is yielding 1 ton of good ore per fm. The stopes in the bottom of the same level west is yielding in places 1 ton of good ore per fm. The new shaft is sinking on the south lode, and the water has very much increased during the past week. The shaftmen are now preparing to send down the pumps for raising the water, which will be completed by the end of the present week. Our sampling to-morrow will be 43 tons, of good price ore.

**EAGLEBROOK.**—H. Tyack, Aug. 23: The water is still in the 20, consequently nothing has been done in driving this level since my report of last week. The endmen are engaged on surface, cutting ground for the new line of rods to the 30-ft. wheel. In the 10 west of the engine-shaft, we still continue driving on the branch going north-west; this branch is now about 8 in. wide, composed of soft spar, copper, and lead ore, but at present does not contain much lead as when I last wrote. The stopes in the back of the adit level, east of the engine-shaft, contain on an average 15 cwt. of lead ore per fm.; the stopes in the back of the adit level, west of the engine-shaft, are producing 15 cwt. of lead ore per fm. and the ground is easy for stopping. We have been able to work the crushing-mill only two days for the past week, in consequence of not having sufficient water for the wheel. We have now about 15 tons of lead ore ready spalled for the mill, and a great quantity broken underground. Two men arrived here on Tuesday last, from Carnarvon Foundry, to fix the 30-ft. wheel, the axle is now in its place, and we are going on with the other work.

**EAST BLACK CRAIG.**—J. Smitham, Aug. 26: The stopes in the bottom of the 33 are poor, but not without lead; the lead has been falling in those stopes from the bottom of the level. We have drawn the best pile of lead stuff to-day that we have ever had in this mine. It is from the back of the 22, west of shaft, the lode is 6 or 7 tons of lead in it; this pit is looking just the same as when it was last reported. The ground in the 12 west is still hard, and 3 or 4 feet a week is as much as four men can drive in it. I find that our raisings of ore for the month of July, with the halvans, are above 20 tons, which is 2 or 3 tons above the estimate I sent you.

**EAST TOLGUS.**—Aug. 23: The stopmen are progressing favourably in sinking the engine-shaft below the 34 fm. level; the shaft is down 64 fms. below the 34. We have set all the ground to drive in the cross-cut, south from the new shaft, to hole to the engine-shaft, and hope to communicate the end to the shaft in two months from this time. We hope the flat-roof shaftmen, and the pair of men that were driving the 20 west on North Buller level, will complete the cutting of a plat and ground for barrow-road in rising, we will have the 12 fm. level, east of engine-shaft, sinking on the caunter lode, is much larger than when last reported; it is now 20 ft. wide, composed of peach and prisms, with good spots of ore, but not to value. The lode in the 12 fathom level, driving east of engine-shaft, on Redruth Consols lode, is 6 in. wide, poor. The lode in the 22 fm. level, driving east from engine-shaft, on Redruth Consols lode, is 6 ft. wide, yielding from 9 to 10 tons of ore per fm. We have broken and sent to surface, since I informed you of our improvement in this end, 8 or 9 tons of ore; it is a splendid course of ore. The lode in the 34 fm. level, driving west of engine-shaft, on Redruth Consols lode, is 10 in. wide, producing good stones of ore, but not to value, although the end is promising in general, in the same level, driving east, the lode is small, but has been letting out more water within the last week, and I think we shall have a change for the better in this end shortly.

**EAST WHEAL RUSSELL.**—W. Metherell, Aug. 23: The 60, driving east, is looking just the same as last reported. We expect we are through the lode in the 53 cross-cut, west of Homersham's shaft; we broke some stones of ore from the lode. The 53, driving east, is much the same as last reported on. We have resumed driving the 58 fathom level east.

**GELLIRHEIRON.**—John Jones, Aug. 23: The stopes in Bonasill's level continue to yield a good deal of ore, from a lode ore of 10 ft. wide. The stopes from Richard's rise, over Francis's level, is not so good as it has been; it contains a good deal of carbonate of lead, and is a very promising vein. The stopes in Francis's level improve in rising, we will have the 10 in. level, east of engine-shaft, sinking on the caunter lode, is much larger than when last reported; it is now 20 ft. wide, composed of peach and prisms, with good spots of ore, but not to value. The lode in the 12 fathom level, driving east of engine-shaft, on Redruth Consols lode, is 6 in. wide, poor. The lode in the 22 fm. level, driving east from engine-shaft, on Redruth Consols lode, is 6 ft. wide, yielding from 9 to 10 tons of ore per fm. We have broken and sent to surface, since I informed you of our improvement in this end, 8 or 9 tons of ore; it is a splendid course of ore. The lode in the 34 fm. level, driving west of engine-shaft, on Redruth Consols lode, is 10 in. wide, producing good stones of ore, but not to value, although the end is promising in general, in the same level, driving east, the lode is small, but has been letting out more water within the last week, and I think we shall have a change for the better in this end shortly.

**GREAT CRININS.**—S. S. Bice, Aug. 25: The lode in the 80 fathom level, east of Union shaft, is without any material change since last reported, worth 64. 6¢ per fm. for copper ore. The lode in the 24 fm. level, east of engine-shaft, is promising for lead ore. The lode in the 17 fm. level, west of Hannah's shaft, is improved in value, being worth 4½. 4¢ per fm. for copper ore. The stopmen are working satisfactorily in forking the mine. In the tribute department, the prospects are similar as when last reported. We are busily employed at the present time in dressing the ore for the next sampling. The workings generally are being carried out in the most energetic manner, so as to develop the resources of the mine.

**GREAT HEWAS.**—J. Webb, Aug. 26: The lode in the 86 end, east of Northey's shaft, is producing some good work; it appears we are now getting on the run of tin ore below the 76. We have extended the 86 cross-cut south to the great flooken, therefore we must have passed through the south lode, where we found some branches of tin; most likely it is split up in these branches about this place; we shall now open out the lode in the 76 fm. level, east of engine-shaft, is promising for lead ore. The lode in the 17 fm. level, west of Hannah's shaft, is improved in value, being worth 4½. 4¢ per fm. for copper ore. The stopmen are working satisfactorily in forking the mine. In the tribute department, the prospects are similar as when last reported. We are busily employed at the present time in dressing the ore for the next sampling. The workings generally are being carried out in the most energetic manner, so as to develop the resources of the mine.

**GREAT ONSLOW CONSOLS.**—G. Rickard, Aug. 27: There is no change to notice in the field of the pitch below the 60. In the cross-cut south, in the 72, the ground is somewhat harder. We have taken down a small portion of the lode in the 87 since last report, which is ore, and presents very good appearances; the value of the same, however, cannot be stated until more of it has been taken down. The branch in the 72, which is ore, is dipping towards the main lode; no doubt it will make a junction with it in depth. There is no change in the ground at said shaft.

**GREAT SOUTH TOLGUS.**—John Daw, Aug. 26: The lode in the 70 is 1 ft. wide, producing a little ore, and still letting out large quantities of water. In a winze sinking below the 30, the lode is 2 ft. wide, producing 4 tons, worth 10¢ per fm. In the winze sinking below the 30 the lode is 2 ft. wide, producing 1½ ton, worth 10¢ per fathom. The pitches are looking well.

**GREAT WEST SORTRIDGE.**—J. Richards, Aug. 25: The engine-shaft is still in the capel part of the lode, which is yielding some good stones of ore, and is very promising. The water is very quick, rendering it difficult for exploration, 2½ ft. only having been sunk during the past week. There is no alteration in any other part.

**GREAT WHEAL ALFRED.**—W. M. Michell, W. Bagelholme, W. Arthur, Aug. 16: The lode in the 180 fm. level, east of Painter's shaft, is 3 ft. wide, of a disordered character; the lode in the 180 level is 2 ft. wide, worth 25¢ per fm. In the 170 west we have to cross-cut south a little to get under copper-house shaft, which is sunk 7 fms. 4 ft. below the 160; the lode is 5 feet wide, producing 1 ton of good ore per fm. The lode in the 160, west of the latter shaft, is from 3 to 3½ ft. wide, worth 50¢ per fm. Since our last we have stripped down about 9 feet of the lode, which yielded fully 10 tons of good copper ore; seeing this in a new channel of veins, we believe it to be a continuous course of ore. We have cut through the lode in the level above (145), which is very large, mixed with kille, and branches of excellent water, and also in extending west, few fathoms we shall get into the same run of ore as that in the level below, being about 9 ft. behind where the ore first came in at the 156. On the south lode, the 137 end is worth 7½ per fm. There is no change to notice in any other part of the mine.

**G. W. Michell, W. Bagelholme, W. Arthur, August 23:** We have to report that the 180, east of Painter's shaft, is without alteration; set to drive at 8¢, 10¢ per fm. The lode in the 180 west is 2 ft. wide, worth 25¢ per fm., set to drive at 12¢ per fm. The 170 west, which is a very large, mixed with kille, and branches of excellent water, and also in extending west, few fathoms we shall get into the same run of ore as that in the level below, being about 9 ft. behind where the ore first came in at the 156. On the south lode, the 137 end is worth 7½ per fm. There is no change to notice in any other part of the mine.

**GREAT WHEAL RADDERN.**—J. Jenkin, Aug. 26: The lode at the eastern engine-shaft is about 1½ ft. wide, composed of muddle, flooken, and spots of lead, and has a promising appearance. In the rise in the back of the 61 fm. level east the lode is 1½ ft. wide, rather hard for rising at present; we shall have an improvement at this point shortly as we get up into the level. The lode in the 51 west is about 2 ft. wide, letting out more water than usual, which indicates that we are approaching nearer the ore ground gone down before this end from the level above; it has a very promising appearance for a good improvement. In the stopes in the bottom of the 51, the lode is looking well, and is worth 40¢ per fm. The lode in the 40, west of the shaft, at the end of this month. All other parts of the mine are progressing satisfactorily.

**GREAT WHEAL VOR.**—Cress's shaftmen have dropped the lift to the 160 fm. level, and will drain the water sufficiently low to commence sinking the plunger-shaft on the coming week. The water is now drained to the 164. Trolway's shaftmen have been clearing stuff on the solar in the 154, dividing and easing the shaft from the 154 to the 164, and securing the whim-plat in the 154.—Main Lode: No. 81. The stopes in the back of the 90, east of Hilghurrow, are worth 16¢ per fm. No. 82 and No. 83. These stopes, in the back of ditto, are worth 12¢ per fm. No. 117. The stopes in the back of ditto, west of 81, are worth 13¢ per fm. No. 114. The stopes in the bottom of ditto are worth 14¢ per fm. No. 118. The stopes in the bottom of ditto are worth 14¢ per fm. No. 120. The stopes in the back of the 123, east of Cross's, are worth 14¢ per fm. No. 121. The stopes in the back of the 123, east of Cross's, are worth 14¢ per fm. No. 122. 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the stopes above the back of the 62 the lode is 3 ft. wide, worth from £30 to £40 tons of ore per fm. The point of the lode has not yet been met with in sinking below the 2 cross-cut, south of Matthew's shaft. In a winze sinking below the 37, east of Matthew's, the lode is 3 ft. wide, producing stones of ore. There is nothing new to notice in our tribute pitches; they continue to yield fair quantities of ore.—Richard's shaft, North Lode: But very little has been done in this part of the mine since the meeting of the adventurers, in consequence of the water being turned out of the Lavistock Canal for several days, the source from which all our machinery gets its supply of water; consequently we have had to raise the level of the driving of the 9, east of the same shaft, by four men. About 6 fathoms' driving will drain the ore ground driven through in the 50, and enable us to set tribute pitches. At Mitchell's shaft, sinking below the surface, the ground continues without alteration since last reported; this being a very important point, and about 6 fms. more sinking will communicate to the 20, we have added two men more to the party to accomplish this object in less time. The tributaries in the back and bottom of the 20, west of Rat-ro-shaft, have been hindered working during the past week by means of foul air, in consequences of which there has been little done at the shaft.

**WHEAL TREBARNY.**—W. Johns, Aug. 26: The winze sinking below the 49, east of flat-road shaft, is holed to the 50, and shall set east and west of the said winze to six men on tribute, at 5s. in 10 fm. In the 50, east of same shaft, the lode is 20 inches wide, with spots of fine ore, but we have raised the level of the driving of the 49, east of the same shaft, by four men. About 6 fathoms' driving will drain the ore ground driven through in the 50, and enable us to set tribute pitches. At Mitchell's shaft, sinking below the surface, the ground continues without alteration since last reported; this being a very important point, and about 6 fms. more sinking will communicate to the 20, we have added two men more to the party to accomplish this object in less time. The tributaries in the back and bottom of the 20, west of Rat-ro-shaft, have been hindered working during the past week by means of foul air, in consequences of which there has been little done at the shaft.

**WHEAL TRELAWNY.**—W. Bryant, W. Jenkin, Aug. 28: Smith's shaftmen are still engaged in cutting a plat at the 120 north the lode is 1 foot wide, composed of lead, muddle, and spar, per fm.; in the 120 south it is 2 ft. wide, worth 6d. per fm. In the 98 south it is 2 ft. wide, worth 12d. per fm. In the 98 south it is 2 feet wide, worth 9d. per fm. In the 108, north of Chippindale's, it is 2½ ft. wide, worth 12d. per fm. In the 98, north of ditto, it is 1 ft. wide, worth 5d. per fm.—South Mine: Trelawny's shaftmen are engaged in casing down the shaft from the 130 to the 142. In the 130 south the lode is 2 ft. wide, worth 10d. per fm.; in the same lode north it is 2 ft. wide, composed of fluor-spar, mundie, and spots of lead ore. In the 120 south it is 2 feet wide, worth 10d. per fm. The stopes and pitches are producing much as usual. We hall sample to-morrow about 80 tons of crop ore.

**WHEAL TREMAYNE.**—R. Williams, J. Williams, Aug. 18: At the boundary engine-shaft, in the 113 east, on Allen's branches, the branches are yielding occasional tones of tin, but not so much as mine. In the 113, east of the same shaft, Allen's branches, which were sunk below the stopes in the back of the same level, east and west of shafts, are worth 10d. per fm. There is no change to notice in the crosscut south of the same level towards the engine lode. The stopes in back and bottom of the 73, east of the same shaft, on Allen's branches, are worth 9d. The stope in the back of the 55, east of the same shaft, on Allen's branches, is yielding its usual quantity of low price tinstuff. At the new engine-shaft, on the south lode, the stopes in the back of the 70, west of shaft, is worth 2d. per fm. In the 70, west of Field's shaft, on the same lode, towards West's engine-shaft, the lode is 4 ft. wide, composed of soft sand and leaden ore, worth 12d. per fm. On occasion of the sinkings of tin and spots of copper ore. At Wheel Margaret shaft, on the same lode, in the 53 east, the lode is 2 feet wide, yielding a little saving stuff for copper ore. The winze sinking under the same level, 10 fms. east of shaft, will yield 2 tons of good copper ore per fm., but cannot be sunk deeper until drained by the level below, which will be down shortly. At Mabley shaft, sinking under the adit level, the ground is much the same as last reported. The stopes in back of the 70, east of flat-road shaft, on same lode, are worth 3d. per fm. for tin.

**WHEAL TREVELYAN.**—J. D. Osborne, B. Gundry, Aug. 23: Watson's engine-shaft is sunk 5 fms. below the 30 in favourable killas ground. The 30 is driven east on Park lode about 8 fms., the average size of this lode is 4 ft., composed of gossan and spar, with stones of rich grey copper ore, and strongly impregnated with green carbonate of copper. We have cleared up the level of the 30, and have got the level of the 30, and reach the deposit of copper, of which we have such strong indications. The cross-cut driving south at the 30 from Watson's shaft is driven about 5 fms.; the ground much improved. We hope to reach Richard's lode in about two months, which produced such large quantities of tinstuff at the levels above. In the 13, driving east on Richard's lode, we are opening ground that will work on tribute as soon as the winze is sunk through from the adit level, which we hope to do in about two months; the size of the lode is about 3 ft. wide, varying work for tin both in the end and middle of the lode. The 19, driving east on Sampson's branch, is yielding good tinstuff. The back of the level is working at 8s. in 17 tribute, by four men. We have cleared up a shaft from surface, on Bucket's lode, 7 fms. deep; this lode is 2 feet wide, producing some rich stones of tin, and the rest of the lode will pay for stamping. Our tribute department looks just as usual, but we have not so many tributaries at work as formerly, owing, we suppose, to the high price of provisions, the men are not so well able to venture on tribute. The new engine works very satisfactorily.

**WHEAL ZION.**—J. T. Phillips, Aug. 27: In the 80 cross-cut north we have nothing new to notice. In the 65 west we have a strong looking lode, 3 ft. wide, composed of mudie, spar, and pease, letting out pure water than usual; the lode in the 65 east is written alteration. In the 50 east the lode is rather more than 3 ft. wide of a very favourable appearance, producing good stones of copper ore. In the 49 fm. level west the south part of the lode is intermixed with strings of copper ores, looking like wood. We expect the next sampling to be rather more than 50 tons.

**WOOD MINE.**—S. Cook, Aug. 27: The leader part of the lode in the winze is about 10 inches wide, composed of lead, jack, mudie, and white iron, with a branch of light blue fluocon in the back about 6 in. wide, a kindly lode. The 14 fm. level north is driven 10 ft.; the lode in the bottom of the end is 3 ft. wide, composed of lead, mudie, capel, spar, and white iron, good stamps work. The men in the south have been employed this week at cutting barrow-roads behind the lift, and also cutting in on the eastern part of the lode, where the lode is split up branches. As this is advisable to drive on the eastern part, or footwall branch; the lode is at present poor, and ground rather tight, but as we have good ground in the winze sinking below the adit, 18 fms. south, we anticipate shortly to meet with better ground in this end, and a better lode as we extend from the point of the horse,

**YEOLAND CONSOLS.**—R. Williams, Aug. 27: Since the last meeting, our prospects in this mine have considerably improved. The 69 fm. level has been driven up by the side of a good lode for nearly 10 fms., and a considerable piece of superior lode has been opened in this level for stopping. The rise in the back of the 60, towards the 46, we expect to communicate to-day, after which the ground driven through in the 60 will be turned to account, by rising stops away and returned. The plat in the 72 was completed on Friday last, and the shaftmen are now engaged in sinking below the 72. The lode at the shaft will more than half pay the expense of sinking at present, being worth 12d. per fm., and I estimate the cost of sinking, including timber, at about 16d. per fm. In the 72, in driving 3 fms. for the length of the plat, we found the lode to improve considerably, and as soon as the cistern is fixed in this level, I propose to drive east by four men, to open out the lode in this direction, when, if it continues as at present, as also that in the 60, we shall at once more than pay the cost of the mine. We have sampled about 3 tons of tin, but the offers are not yet arrived.



## THE JOINT-STOCK COMPANIES ACT, 1856.

[FROM A CORRESPONDENT.]

In the Journal of June 21, the attention of our readers was drawn to the distinction which the provisions of this bill would, if passed, entail on the mining companies existing beyond the pale of the Stannaries Court, and suggested that a more general and liberal measure, as affecting mines, would engender confidence, and be fraught with much good to the mining community; while, at the same time, we ventured to throw out the hint that if, by a short Act, it were possible clearly to define the principles and privileges of the "Cost-book System," which Act should provide a general annual registration by all companies trading under its provisions, such registration would alike give full security to the public and the shareholder, would foster the development of the mineral resources of the country; and by a liberal scale of fees, which alone the risk of mining ought to bear, would also ensure a large revenue to the Government. However, the Joint-Stock Act was passed, excepting only from its provisions the mines worked within the jurisdiction of the Vice-Warden, and it is now imperative, where mining companies possess more than 20 partners, and trading out of Cornwall or Devon, that all such companies shall, on or before November 3, be registered thereunder, either with, or without, limited liability.

The past week has given evidence that its protection and principles are approved, and even sought, notwithstanding the expenses which its formula entails, for, among our "Notices of Meetings" is a record of the fact that one company has, by a vote of more than eight-tenths of its shareholders assembled at a general meeting, specially convened to consider the propriety thereof, unanimously resolved to take advantage of the Act and its limited character, and which unanimity presents a forcible illustration that shareholders are alive to, and will prefer, the security which such Act provides, although accompanied with the drawback of additional expense. We allude to the Broadford Mining Company, which has been established about five years, and which, we are told, is in an especially good position to embrace the advantages of the Joint-Stock Act, inasmuch as the mine itself is now likely to be turning out large quantities of ore, nearly the whole of the "dead work" having been done.

We, last week, reminded our readers that to ensure "Limited Liability" in the constitution of such companies, it will be necessary to establish such provision in the "Memorandum of Association" (a form of establishment requisite under the Act); and, as we understand that that of the Broadford Mining Company has been drawn with great care and perspicuity, as well as the "Articles of Association," we have applied for, and hope next week to give, an exact copy of these documents, for the information of our readers.

These "Articles of Association" properly drawn, and not inconsistent with the character of the Act, will override the regulations for the management of companies, provided for in table B, and thus enable mining companies to ensure the same uniform system of management as regards its general meetings, and, at the same time, limit the power of directors.

## WINDING-UP OF MINING AND JOINT-STOCK COMPANIES.

**GREAT CAMBER MINING AND QUARRYING COMPANY.**—The official manager (Mr. Harding, of Lothbury) reports to Vice-Chancellor Sir Page Wood, that the property of this company has been sold, and has realised 1000*l.*; that prior to its sale he visited the property at Maestryfar, at Llanellid, and Llanaber in Merionethshire, and found the same to consist of lead and copper mines, and of certain quarries held by the company under lease for 21 years, from Sept. 29, 1833, at a yearly rent of 5*l.*, and 1-10th royalty. A crushing-house and smith's shop had been erected, together with a 40-ft. water-wheel and crushing machinery, and plant and materials. The lease contained a covenant that not less than 30 men should be kept employed at the mines, but operations having ceased prior to the date of the order for winding-up the company, it appeared to the official manager that the lease might be forfeited for breach of the said covenant, which would entail a serious loss upon the company; and he, therefore, considered it desirable to negotiate with the lessor for waiver of the covenant, in order to afford time for the sale; and the lessor consented to this, in consideration of the payment of 30*l.*. The official manager further considered it was expedient to retain the services of the superintendent of the works, and to employ a few men to prepare for sale a quantity of ore that had been previously raised: the expense of doing this was about 5*l.* per week, which the produce would more than repay. The official manager had consulted several of the shareholders with respect to the best mode of disposing of the property: it was decided to do so by private contract. And he further reports that the debts, liabilities, and claims on the mine, under the winding-up, amount to 4900*l.*. Several creditors had commenced actions against individual contributors, and it was absolutely necessary to provide for the payment of debts by a call of 10*l.* per share. The list of contributors had been settled to the extent of 11,150 shares, and the total assets and credits amount to 865*l.*; but to compromise and cash the debts and costs incurred 9800*l.* was required in addition to the assets. It is understood the mine is now worked for gold.

**CWMDYLE MINING COMPANY.**—It is understood that the liabilities are nearer 2000*l.* than 700*l.*, as stated in a previous notice.

**AMAZON LIFE ASSURANCE COMPANY.**—The report of the official manager (Mr. Harding) to the Court of Chancery in this matter, furnishes a remarkable exemplification of the way in which modern assurance companies are "concocted." The Amazon Life Assurance and Loan Company, it appears, was projected with 33,869 shares, but a deposit of 5*s.* was paid on only 1055 of these shares, for which the Deed of Settlement was executed prior to complete registration, but no payment was at any time made in respect of the remaining 31,130 shares. The capital for which the deed was subscribed, and for which shares were allotted, amounted to 39,312*l.*, and yet the total amount paid up was only 1651*l.*, being 5*s.* per share on 6807 shares, and leaving a balance of 81,260*l.* due in respect of deposits on 32,505 shares, and 29,184*l.* as the amount of capital still uncalled. In the return made by the company to the Joint-Stock Companies Registration Office, signed by Hammond and Alexander Todd, two of the directors, in 1854, it was set forth that 28,575 shares in the company were forfeited to the company, but no entry appears on the minute-book of any meeting of directors at which such alleged forfeiture took place, and if so made, it was not in accordance with the 94th clause of the Deed of Settlement. Of the shares so returned as forfeited, 2829 shares were shares in respect of which the Deed of Settlement had been executed prior to complete registration, and of such shares no less than 27,700 were shares standing in the names of the provisional directors, and the remaining 75 were allotted subsequently to the date of complete registration. The books contained an entry of 775*l.* for "preliminary expenses," which was explained to have been expended in the presentation of 100*l.* each to the provisional directors and projectors, amongst whom figure the names of one "noble lord," and "right hon." gentleman. The total premiums received in respect of policies amounted to 1811*l.*—the amount paid for expenses being 2154*l.*, in addition to which there were claims of 3266*l.* against the company. The order to wind-up has proceeded very rapidly, as compared with many other cases; and the Master in Chancery has directed a call to be collected of 30*s.* per share, which falls almost entirely on the shareholders, the original directors being *non est inventus*. The order to wind-up was made in November, 1854; and, although there are no fewer than 119 contributors and 36 creditors, their cases have all been disposed of. In concluding his report, with some comments on the case, the official manager justly remarks that the Amazon Life Assurance and Loan Company was little else than an abortive scheme, promoted chiefly by individuals without means, who subscribed the deed of settlement for an amount that they were utterly unable to pay, such subscriptions being solely in order to comply with the 7th sec. of 7 and 8 Vict. c. 11, so as to obtain a certificate of complete registration, whereby the company became constituted a joint-stock company, within the meaning of the Act, and the whole of the paid-up capital being inadequate to defray the expenses necessary to bring the company before the public sufficiently to give assurance confidence, the project entirely failed. The company was located at the Chesapeake corner of Ironmonger-lane, and was noted for its huge brass plate (some 5 ft. high), in the form of a shield, with the words "Amazon" in the middle.

**NATONAL LAND COMPANY.**—The Master in Chancery Richards has commissioned Mr. Roxburgh, barrister, and Mr. Goodchap, attorney, of Walbrook House, to go on circuit during Sept. and Oct., and settle the cases of the numerous subscribers in this company who have claims in connection with the various estates at Banbury, Stoney Stratford, Northampton, Warwick, Birmingham, Shrewsbury, Liverpool, Preston, Bury, Manchester, Crewe, Hanley, Stafford, Derby, Nottingham, and Leicester. Each subscriber on proving his claim will have a certificate entitling him to the dividends arising out of the property.

**SEWAGE MANURE COMPANY.**—An order has just been issued by Vice-Chancellor Kindersley for winding-up this company.

## LIMITED LIABILITY MINING COMPANIES.

No fewer than seven new mining companies have been incorporated under the new Act of Parliament since it passed. They are—The Rusbon Coal Company, the Rhydydefel Colliery Company, the Shropshire Blackwood Mining Company, the Royal Consolidated Copper Mines of San Fernando, Cuba, the Esclair Lee Mining Company, the Llwynmaes Mining Company, and the Old Park Iron Company.

## The Mining Market; Prices of Metals, Ores, &amp;c.

METAL MARKET, London, August 29, 1856.

COPPER.		S. & S.	
Copper wire	p. lb.	0 1 1/4	0 1 2
ditto tubes	p. lb.	0 1 1/4	0 1 3
Sheeting and bolts	p. lb.	0 1 0	—
Bottoms	p. lb.	0 1 1/4	0 1 1
Old (Exchange)	p. lb.	0 0 10	0 0 10
Best selected	p. ton	110 10	0
Tough cake	p. ton	107 10	0
File	p. ton	107 10	0
South American (nom.)	p. ton	100 0	0
IRON.		per Ton.	
Bars, Welsh, in London	p. ton	9 0	0
ditto, to arrive	p. ton	8 10	0
Nail rods	p. ton	8 10	0
Stafford, in London	p. ton	9 13	0
Bars, ditto	p. ton	9 2	0
Boards, single	p. ton	10 5	0
Fig. No. 1, in Wales	p. ton	4 10	0
Refined metal, ditto	p. ton	5 10	0
Bars, common, ditto	p. ton	7 12	0
ditto, railway, ditto	p. ton	7 15	0
ditto, Swed. in Lon.	p. ton	14 0	0
in stock to arrive	p. ton	15 0	0
Fig. No. 1, in Clyde	p. ton	3 15	0
ditto, in Tyne and Tees	p. ton	3 10	0
ditto, forged	p. ton	3 10	0
Staffordshire Forge Pig	p. ton	4 15	0
Welsh Forge Pig	p. ton	3 15	0
LEAD.		per Ton.	
English Pig	p. ton	23 15	0
ditto sheet	p. ton	24 10	0
ditto lead	p. ton	26 0	0
ditto white	p. ton	27 0	0
ditto patent	p. ton	27 0	0
Spanish, in bond	p. ton	27 0	0
American	p. ton	27 0	0
FOREIGN STEEL.		per Ton.	
Swedish, in kegs	p. ton	19 10	0
ditto, to arrive	p. ton	19 10	0
ditto, in faggots	p. ton	22 0	0
English, Spring	p. ton	18 0	0

\* At the works, 1s. to 1s. 6d. per box less.  
+ Four months' credit, and free on board at Rotterdam. The per centage of peroxide is about 60 for Nassau lump, 64 to 65 for Glessen, and 66 to 75 for ground.

**REMARKS.**—The tendency of metals generally this week has been upward, and such as have not advanced are steady at our quotations. Copper, iron, lead, and steel, have not varied in value; while spelter, tin, and tin-plates, realise improved rates.

**COPPER.**—As previously reported, sellers decline taking orders for short deliveries, and in many cases—in fact, almost all—have closed their books entirely for the present. This metal is most difficult to meet with, either in small or large quantities; and it is stated that 4*d.* per lb. advance has been paid, allowing a moderate time for delivery; even this offer was refused by many houses, and it is doubtful whether any more could be obtained on similar terms. A scrupulous feeling seems to exist amongst the smelters lest any copper should be purchased for speculation, and it may be partly on this account that they object to sell. For such great people to exhibit such a jealous disposition is really extremely paltry.

**IRON.**—In English bars sales continue to be made for delivery in six or eight weeks, at 8*l.* 10*s.* to 8*l.* 12*s.* 6*d.*, f.o.b. in London, or 7*l.* 12*s.* 6*d.* to 7*l.* 15*s.* at the works. The ironmasters are well off for orders, and are indifferent about further contracts at these prices, unless they can have the above time for shipping. Rails are in better demand at current prices. Staffordshire of good quality maintains its former value, but business is sluggish; merchants not understanding the various qualities are subject, when buying, to be misled by the wide difference that exist in the prices of first and second qualities, and conclude that they are being imposed upon by the standing houses, because the brand is established, and more is obliged to be paid for brand than the real value of the iron. But such is not the case. There are very few, if any, respectable houses in Staffordshire who realise more than a fair profit; and it is only by these second-class houses using inferior pigs, and other queer means, that enable them to sell at such low prices; for where there is so great a margin as 30*s.* per ton, it is of great consideration. Scotch pigs have throughout the week been quoted at 73*s.* 6*d.*, quiet, but steady. Shipments are satisfactory, but speculative purchases are limited.

**LEAD.**—No change to note with regard to value. The demand has been but moderate.

**SPELTER.**—An advance of 10*s.* per ton has been established; some holders, indeed, will not sell under 16*s.* per ton. The stock is light, and will assist sellers in getting their price.

**TIN.**—A good business is doing in English. Foreign has somewhat improved. About 500 to 1000 slabs of Banca have changed hands, at 12*l.* 10*s.*; and small lots, 12*l.* 15*s.* to 12*l.* 27*s.* per ton. Straits is scarce, and eagerly sought after.

**TIN-PLATES.**—Makers demand higher prices, and require time to execute orders. The stocks here are very low, scarcely any coke, and but few charcoal. Out of stock, prices are 31*s.* for IC coke, and 37*s.* for IC charcoal; for forward delivery, 6*d.* per box less would be accepted.

**STEEL.**—English and foreign are without alteration.

**QUICKSILVER** commands former rates.

**LIVERPOOL, AUG. 28.**—Since last report, our metal market presents no feature worthy of especial notice, the only improvement observable in iron being in Welsh bars, for which an increased demand is reported, the makers of the better brands being by no means desirous of making sales to any great extent at current prices. Good orders from the Continent continue to arrive, but they are chiefly for the higher class of marks. In Staffordshire iron (with the exception of sheets, for which a fair demand exists), prices are quite in favour of the buyers, more especially with respect to the inferior brands, the makers for the most part being anxious sellers. In Scotch pig-iron, the business has been very limited, and our quotations show but a trifling variation from last report; the demand has been almost exclusively for shipping iron, which has increased in value in consequence. For storekeepers' warrants, mixed numbers, the enquiry has been very small, and yet the price is maintained; this is a healthy feature, and leads to the inference, that with anything like a brisk demand prices will advance. Shipments continue to be large, and to exceed those of this time last year; for the present week, they are reported as 9710 tons, against 7651 tons in the corresponding week of last year, being 2059 tons in excess. The local consumption continues to be active, and is gradually increasing, and with such shipments cannot but absorb the make, leaving no surplus for storing. The price of storekeepers' warrants, for mixed numbers, this time last year was 75*s.* 6*d.* per ton, or 6*s.* per ton above the present value. English tin is steady, and a fair enquiry is reported. Tin-plates are in increased demand, and higher prices are offered; for coke plates, especially, the greatest request is experienced, and some makers have refused orders, being full for some time; this branch of the trade looks very healthy. A considerable business is being done in copper, but a sellers restrict their sales to parcels for immediate requirement, refusing to make contracts for large quantities, or for remote deliveries; the present price is consequently well maintained, and the tendency is upwards. Lead continues to be in moderate demand, and the price is unchanged. In other metals we have nothing to report. The following are the quotations:—Iron: Merchant bar, 8*l.* 6*s.* per ton.—Tin: Common block, 12*l.* 10*s.*; common bar, 12*l.* 13*s.*; refined block, 13*l.* 3*s.* 6*d.*—Lead: Sheet, 25*s.* per ton; pig, 24*s.* 10*s.*—Copper: Tile and tough cake, 107*l.* 10*s.* per ton; best selected ditto, 110*l.* 10*s.*; bolt and sheeting, 1*s.* per lb.—Yellow metal sheeting, 10*l.* 10*s.* per lb.

From Bombay (July 28), we learn that the importations of metals have been large—all descriptions are dull of sale, and have declined in prices. Steel in faggots, pig and sheet lead and spelter, are in good request. In copper, excepting tiles, which remain firm at our last quotations, all descriptions are difficult of sale, and prices have declined; of South Ame-

rican there is none in the market, the demand for it being very good. The stocks of red and white lead are moderate, and both continue in demand.

From New York (Aug. 7), we learn that Scotch pigs are firm at former rates. For copper the market is rather dull, and prices are lower. Lead has improved a trifle; pipe and sheet are selling at 8*s.* c. per pound. The coal market is dull; no arrival of foreign; Liverpool scarce, and wanted.

**MINES.**—The mining market is daily assuming a firmer tone, and there is great activity in shares. One or two important improvements early in the week created a demand for shares in two or three mines, and consequently a rise in value took place, especially in East Toigus, shares in which have now reached 75*s.* South Frances shares have been in request at a further advance, and few sellers to be found. In Grenville, which is the adjoining mine, an important improvement has been reported, and shares rose to 1*l.*; the mine promises are long to assume an important position. Great Alfred remains firm. Basset, 285*s.*; Wheel Wrey, 8 to 8*s.*; Mary Ann, 35 to 36*s.*, and several transactions in them; Gonama, 26 to 26*s.*; South Caradon, 280 to 290*s.*; Bull, 280 to 290*s.*, and rather more enquired for; Devon Consols, 395 to 400*s.*; Porkella, 10 to 11*s.*; South Frances, 365*s.*; East Basset, 42*s.*; Alfred Consols, 13*s.*; West Providence, 18*s.* to 19*s.*; South Toigus, 130*s.*; Sortridge Consols, 2*s.* to 2*s.*; Clifflah and Wentworth, 13*s.*; St. Alfred, 4*s.*; North Frances, 10*s.*; West Frances, 15*s.*

## Mining Exchange Official List of transactions during the week:—

**SATURDAY, AUG. 23.**—East Basset, 40*s.* to 41*s.*; Gonama, 26 to 26*s.*; Porkella, 10*s.*, 9*s.*, 9*s.*; Rosewarne United, 65 to 65*s.*; Sortridge Consols, 2*s.*; South Frances, 365 to 365*s.*; Wheel Wrey, 287*s.* to 287*s.*; Wheel Mary Ann, 34 to 34*s.*; North Basset, 32*s.*, 3*s.* div.; Rosewarne, 26 to 26*s.*; Great Alfred, 4 15 to 4 15*s.*; Grenville, 21*s.* to 21*s.*; Wheel Mary Ann, 34 to 34*s.*  
**MONDAY.**—East Toigus, 70*s.*; Gonama, 26 to 26*s.*; Great Alfred, 4 15 to 4 15*s.*; Rosewarne, 65 to 65*s.*; Sortridge Consols, 2*s.*; West Sortridge, 10*s.*; Wheel Wrey, 8 to 8*s.*; Mary Ann, 35 to 36*s.*; South Caradon, 280 to 290*s.*; Bull, 280 to 290*s.*, and rather more enquired for; Devon Consols, 395 to 400*s.*; Porkella, 10 to 11*s.*; South Frances, 365*s.*; East Basset, 42*s.*; Alfred Consols, 13*s.*; West Providence, 18*s.* to 19*s.*; South Toigus, 130*s.*; Sortridge Consols, 2*s.* to 2*s.*; Clifflah and Wentworth, 13*s.*; St. Alfred, 4*s.*; North Frances, 10*s.*; West Frances, 15*s.*  
**TUESDAY.**—East Basset, 41*s.* to 42*s.*; Gonama, 26 to 26*s.*; Great Alfred, 4 15 to 4 15*s.*; Rosewarne United, 65*s.*; Wheel Grenville, 26*s.* 6*d.*, 2*s.* 6*d.*, 2*s.* 6*d.*; Wheel Mary Ann, 34 to 34*s.*  
**WEDNESDAY.**—East Basset, 41*s.* to 42*s.*; Gonama, 26 to 26*s.*; Great Alfred, 4 15 to 4 15*s.*; Rosewarne United, 65*s.*; Wheel Grenville, 26*s.* 6*d.*, 2*s.* 6*d.*, 2*s.* 6*d.*; Wheel Mary Ann, 34 to 34*s.*  
**THURSDAY.**—Great Alfred, 4 15 to 4 15*s.*; Great Badden, 16*s.* 6*d.* to 17*s.* 6*d.*; North Frances, 33*s.*, 33*s.*; Porkella, 10*s.*, 10*s.*, 10*s.*; Pech-an-drea, 20*s.* to 21*s.*; Providence Mines, 60 to 61*s.*; Trevelyan, 8*s.*; Wheel Basset, 285*s.*, 285*s.*, 285*s.*; Wheel Grenville, 1*s.*; Wheel Wrey, 8*s.*, 8*s.*, 8*s.*  
**FRIDAY.**—Clifflah and Wentworth, 13*s.*; Duke of Cornwall, 17 to 17*s.*; East Toigus, 70*s.*, 72*s.*, 75*s.*; Great Alfred, 4 15 to 4 15*s.*; Great Howas, 10*s.* 6*d.* to 11*s.*; North Frances, 10*s.*; Porkella, 11 to 11*s.*; Rosewarne and Herland, 2*s.* to 2*s.*; Rosewarne United, 67*s.*; South Frances, 365*s.*; Trevelyan, 6*s.*; Wheel Grenville, 1*s.*; Wheel Wrey, 8*s.*

## Business reported to have been done on the Stock Exchange:—

**SATURDAY, AUG. 23.**—East Basset, 40*s.*; Great Wheel Alfred, 4*s.*; Porkella, 10*s.* to 10*s.*; Tamar Consols, 1*s.*; Ludcott, 34*s.* 6*d.*; Gonama, 27*s.*; South Wheel Wrey, 10*s.*; Alton Mines, 3*s.*; Port Bowen, 3*s.*; Chancelorville, 8*s.* 6*d.*  
**MONDAY.**—North Wheel Basset, 32*s.*; Trevelyan, 3*s.*; Tincroft, 3*s.*; Great Wheel Alfred, 4*s.*; Duke of Cornwall, 17*s.*  
**WEDNESDAY.**—West Basset, 29*s.* to 30*s.*; North Frances, 9*s.*; Sortridge Consols, 2*s.*; Duke of Cornwall, 18*s.*  
**FRIDAY.**—Duke of Cornwall, 19*s.*; Sortridge and Bedford, 1*s.* 6*d.*, to 1*s.* 6*d.*; Trevelyan, 2*s.*

## The arrivals of ores and metals during the week are as follow:—

**MONDAY.**—In London, 13 tons regulus from Holland, 1611 bags copper ore from the Cape of Good Hope, 100 casks zinc from Belgium.  
**TUESDAY.**—In London, 1572 bags iron from Sweden, 1530 pigs lead from Spain, 1450 casks spelter from Belgium.  
**WEDNESDAY.**—In London, 100 casks zinc from Belgium, 1470 pigs lead from Spain, 1570 bags iron from Sweden.  
**THURSDAY.**—In London, 400 pigs lead from Hamburg, 1667 plates spelter from Goervey, 500 blocks tin from Holland, 1387 blocks tin from Singapore, 21 cases and 17 casks rolled zinc from Belgium.  
**FRIDAY.**—In London, 227 casks and 14 cases zinc from Belgium, 750 pigs lead from Spain, 1500 bags iron from Sweden, 1400 casks spelter from Hamburg.

**At Redruth Ticketing, on Thursday, 3418 tons were sold, realising 21,217*l.* 11*s.* The particulars of the sale were:—Average produce, 7*s.*; average price, 6*s.* 4*s.*; average standard, 127*l.* 16*s.*; quantity of fine copper, 239 tons 11 cwt. The sale at Pool, on Thursday next, will comprise 3028 tons.**

**At Swansea, on Tuesday, 2236 tons of copper ore will be sold, including ores from Cobbe, Berehaven, Garrucha, Kapunda, Malaga, Spanish, Cronbane, Tigrion, Knockmahon, Castilian, Peninsular, French Slag, Preminna, and Wheel Emma.**

**At Liverpool, on Aug. 27, the 70 tons of copper regulus, ex Proven, were sold in two lots, realising 27*l.* 10*s.* and 15*l.* 12*s.* 6*d.* respectively. The copper ore, ex Rattler, realised 41*l.* 12*s.* 6*d.*. The parcel, ex Camana, postponed from Aug. 15, will be sold on Monday.**

**In the Bullion Market.**—Bar gold, 77*s.* 9*d.* per oz. standard; United States gold coin, 76*s.* 4*d.*; bar silver, 5*s.* 1*d.* per oz. standard; ditto, containing gold, all gold above 5 grs. in the pound to be paid for, 5*s.* 1*d.* per oz. standard; 5-fr. pieces, 4*s.* 11*d.* per oz.

## The following dividends have been declared during August:—

Mines.	Per share.	Amount.
Wheel Basset	£10 0 0	£5,120 0 0
North Wheel Basset	0 12 6	3,750 0 0
West Wheel Seton	6 0 0	2,400 0 0
Providence Mines	4 0 0	2,240 0 0
Alfred Consols	0 6 0	1,530 0 0
Wheel Wrey	0 7 0	1,433 12 0
Great Work	10 0 0	1,100 0 0
Rosewarne United	2 0 0	1,024 0 0
Botallack	5 0 0	1,000 0 0
Wheel Exmouth and Adams	0 3 0	855 0 0
Eyam Mining Company	0 10 0	700 0 0
East Pool	5 0 0	610 0 0
Wheel Seton	3 0 0	594 0 0
Wheel Owles	6 5 0	500 0 0
Bedford United	0 2 0	400 0 0
Levant	2 0 0	320 0 0
Total		£23,702 12 0

Great Work Mine has declared a dividend of 10*l.* per share.

**At East Pool Mine meeting, on Monday, the accounts showed:—Balance last audit, 22*l.* 2*s.* 4*d.*; ore sold, 4039*s.* 2*s.* 9*d.*=4961*l.* 1*s.* 10*d.*—Mine cost and merchants' bills, June and July, 3241*l.* 16*s.* 3*d.*; leaving balance in favour of adventurers, 81*l.* 8*s.* 10*d.*. A dividend of 640*l.* (5*s.* per share) was declared.**

Botallack has declared a dividend of 1000*l.* (5*s.* per share).

**At Bedford United Mines meeting, on Thursday, the accounts showed:—Balance last account, 1407*l.* 6*s.* 1*d.*; ore sold and carriage, 3267*l.* 9*s.* 7*d.*=4744*l.* 15*s.* 8*d.*—June dividend, 600*l.*; office expenses, 35*s.* 2*d.*; income tax, 64*l.* 17*s.* 1*d.*; mine cost, 2607*l.* 7*s.* 4*d.*; dues, 197*l.* 10*s.* 11*d.*; leaving balance in favour of mine, 1259*l.* 16*s.* 4*d.*. A dividend of 400*l.* (2*s.* per share) was declared.**

**At Wheel Arthur meeting, on Thursday Mr. A. Richards in the chair, the accounts showed:—Balance last audit, 157*l.* 10*s.* 8*d.*; cash for bills at bankers' last meeting, 598*l.* 5*s.* 4*d.*; ore sold and carriage, 425*l.* 18*s.* 10*d.*; arsenic sold, 17*l.* 10*s.*=1199*l.* 8*s.* 10*d.*—Mine cost and dues, 1055*l.* 12*s.* 11*d.*; secretary, committee, auditors, &c., 40*l.* 12*s.* 5*d.*; leaving balance in favour of mine, 52*l.* 19*s.* 6*d.***

**At West Caradon Mine meeting, on Aug. 20, the accounts showed:—Balance last audit, 1211*l.* 10*s.* 3*d.*; ore sold (deducting dues, 333*l.* 13*s.* 2*d.*), 5037*l.* 14*s.* 8*d.*; materials sold, 49*l.* 11*s.* 11*d.*=6298*l.* 6*s.* 10*d.*—Mine cost, 3641*l.* 8*s.* 9*d.*; doctor and club, 49*l.* 13*s.* 3*d.*; materials, 76*l.* 7*s.* 5*d.*; interest and commission, 1**







# THE PROGRESS OF MINING IN 1856. BEING THE TWELFTH ANNUAL REVIEW.

By J. Y. WATSON, F.G.S., Author of the *Compendium of British Mining* (published in 1843), *Gleanings among Mines and Miners*, &c.

A FEW COPIES OF THE REVIEW OF 1855, containing Statistics of the Metal Trade, the Dividends and Per centage Paid by British and Foreign Mining Companies, and the State and Prospects of upwards of 200 Mines. Also, A FEW COPIES OF THE REVIEW OF 1852, 1853, and 1854, MAY BE HAD ON APPLICATION AT MESSRS. WATSON AND CUELL'S Mining Offices, 1, St. Michael's-alley, Cornhill, London.

Also, STATISTICS OF THE MINING INTEREST. By W. H. CUELL.

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## Notices to Correspondents.

\* Much inconvenience having arisen, in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

**INFORMATION OF COPPER.**—Sir: Having an interest in some copper mines abroad, the ore of which, although abundant, is too poor for shipping, and the plan adopted for it is to heat the ore, or precipitation, I should like to have the opinion of some of your correspondents, if the copper thus obtained in the form of black or dark paste could not be shipped in that shape (dried, of course), and be a marketable article here, thus rendering unnecessary the smelting, or refining, on the spot, which is expensive even in that form, fuel being very dear? Much interest is now attracted to the humid process, and I shall very shortly have the pleasure of communicating with you on that subject from the spot.—*CORNER: London, Aug. 25.*

**SOUTHERLAND COPPER WORKS.**—These mines were offered by Mr. J. H. Lundt, of Copenhagen, to a solicitor of London, in June, 1855. The smelting works were abandoned, in consequence of there being no sulphurets attainable in the vicinity to flux the carbonates which were produced from the mines. The late proprietor, Mr. Reinhardt, worked the mines single handed for several years, and returned a profit: on his demise, it was necessary the property should be sold, in order to be divided amongst the heirs. Since 1850, the works have been in possession of the trustees only working them in order to keep up their right to the property, as in case of a certain amount of labour not being performed they would become forfeited to the Government.

**MANUFACTURE OF IRON "GAS FUEL."**—GURLEY, MICKLE, & CO. Sir: I was surprised to observe, from your Journal of last week, that a paper had been read by a gentleman named Worsley, at the recent meetings of the British Association, on an invention of Dr. Gurley, to introduce gaseous fuel in iron smelting. If the members had read the article in the Journal during this year, they would have been sensible that all that is really useful or practical in its form part of Mr. Mickle's system of smelting. As to the other, about double furnaces, &c., practical men know that it can amount to nothing; and, indeed, the ironmasters could not, if they would, throw away their present furnaces and the immense capital embarked in them, and build fresh ones. It merely proves the firm and solid foundation upon which Mr. Mickle's system rests; and we only wish here, in order to get the Cleveland stone more fully and quickly opened out, that some of the ironmasters would commence with it. This done, there is little fear of the others starting, for they will not be able to do otherwise.—*AN ENGINEER: Darlington, Aug. 26.*

**"T. L." (Brighton).**—The Cost-book System, when carried out in its integrity, is very simple. The purser is bound to furnish the accounts, bi-monthly or quarterly, as the case may be; it is then known what are the quantities of ore sold, and the merchants' bills due; the calls should then be made; if the shareholders pay their liabilities, they can declare off, but in doing so they receive no further benefit from the property. In some companies, where there are defaulting shareholders, the committee hand over their names to the merchants, who then have the option of suing them, should they deem it necessary.

**WATER COMPANIES IN CALIFORNIA.**—With the exception of the Marysville Gas and Water Company, none of these associations have appeared prominently before the British public. The disastrous failure of all the gold mining companies under English auspices in California, have engendered a distaste for speculation in that unsettled state.

**TRANSACTIONS WITH LONDON SHAREDEALERS.**—Sir: About twelve months ago I employed Mr. —, of London, to purchase for me a share in Rosewarne United Mine, for which I paid him in course of post on his informing me the price (for I then lived in the country); he has, however, never yet delivered the share, confesses he is responsible for it, but states that the party from whom he bought it could not deliver it to him, owing to some other person having advanced money on the share, and who holds it. I shall be greatly obliged by your informing me what I ought to do under these circumstances. Ought I to seek to recover the original price of the share, for I do not suppose he handed over the cash without receiving the share, or simply try to compel him to hand over the share and dividends, or rather two shares, for they have been doubled?—*A SUBSCRIBER: London, Aug. 26.* [A respectable solicitor should be consulted, and the defaulting shareholder could be speedily compelled to deliver the two (512ths) shares, together with all dividends he may have received since the purchase-money was paid.—*ED. M. J.*]

**"T. C. B." (Gloucester-place).**—The Alton Mining Association has not paid a dividend since November, 1855. The secretary is Mr. E. J. Cole; the directors are Messrs. J. Labouchere, G. B. Carr, and H. D. Woodford. The offices are No. 2, New Meers, Street. We are unable to state whether a dividend will be paid this year; since 1853, despite the war, a small profit has been shown in the accounts.

**WHEAL MARY ANN.**—A correspondent calls attention to the state and prospects of this mine as deserving the notice of capitalists. Wheal Mary Ann has more ore discovered and larger reserves than all the lead mines in the district put together. At the next account, the last dividend, of 2s., can be declared, and 700l. added to the balance, which will give the mine a balance of 2000l. There is an extra sampling, making 13 in the year. Our correspondent would suggest to the adventurers the propriety of having a bonus at the next account. The shares, now at 36 to 37, with a 2d. dividend, are paying 24 per cent. interest for outlay.

**WEST CERNIS MINING COMPANY.**—We understand the committee have not yet been enabled to bring the requisite sum from the shareholders necessary to obtain possession of Wheal Cernis, which would have been a most desirable acquisition. A meeting will shortly be convened, in order to take into consideration the steps to be adopted under present circumstances.

**MINING SECRETARIES.**—A correspondent complains of the want of courtesy shown by one of these gentlemen. He must remember, in the instance he quotes, that the individual whom he applied to, in addition to his English adventures, has several foreign mines, besides various other miscellaneous affairs, to manage, and consequently, inflated with his new-blown dignity, cannot afford to waste his breath on small shareholders. What we would advise is this, as the secretary's time is so much engaged in other concerns, let the proprietor move that the management of the mine be transferred to some other office, where the shareholders may receive the information they require.

**"T. C. B." (St. John's Wood).**—Mr. O'Connor is expected to arrive in this country from California about the middle of November next. Whether the capital for a canal in that State can be obtained here is questionable, now that gold mining under British auspices is in such bad odour. At present, there appears to be little confidence in England to speculate in any companies in that country, especially now that the United States' Government appears to be superseded, and a Committee of Vigilance reigns supreme at San Francisco.

**TRELOWNETH.**—Sir: A meeting is called for next week, when the usual statement of accounts, I suppose, will be gone through, and then another call be made. When, Sir, is this to end? Let our committee and secretary tell us at the next meeting how much we are to pay, but I would ask them to let these interminable calls cease.—*AN ORIGINAL SHAREHOLDER: Islington, Aug. 28.*

**COTIAF MINING COMPANY.**—Sir: I lately bought some shares in this company, which, I believe, is most honestly managed. I understand the company intend to commence smelting there, and have sent out the necessary materials, with a mason. Are they going to introduce the patent process to the English company. Previously, and is a superintendent, who has had considerable experience in smelting abroad, to be appointed? I have heard divers rumours, and, probably, through the medium of your columns I may obtain correct information.—*C. N.: Liverpool, Aug. 27.*

**METROPOLITAN REACHING AND SINKING COMPANY.**—This association was not able to get the required capital to carry on operations, and consequently was dissolved. The offices were in Moorgate-street. The principal promoter was Mr. Francis Whittaker, of Tonbridge; the property on which the plant was to have been erected was held by him.

**DALREACHA MINING COMPANY.**—This association has been dissolved, the last meeting was held the latter end of June, 1855; the solicitor was Mr. John Duncan, of the Conway and Carreg-hova Mines. Mr. James Crosby, of Church-court, Old Jewry, was one of the directors. The original proprietor of the mines was Mr. Conrad Montgomery; we are unable to say what price he obtained for them, or what were the terms on which they should be sold to the English company. Previously, they were introduced to the public as the Dalreacha Silver-lead Mining Company. The general impression is that, if properly managed, they would not have been so abortive as they have proved.

**"K. Q. X."**—We cannot express an opinion on the private correspondence forwarded. East Rosewarne United has again been advertised as Gwincar Conals, being its former name. Quintrell Downs has been stopped for some time, and when working was continually unprofitable.

**MALLEABILITY OF GOLD.**—Sir: Recently, while in New Zealand, I published some observations on the malleability of gold, with reference to its use in giving distinctness to minute grains of native gold in auriferous soils through which they may be disseminated, and in allowing of their ready separation by hand. I should feel obliged by your giving insertion to the following, which I believe contains the substance of them in a condensed form:—It has often struck me that the character of malleability in gold, superior to that of all other bodies, might be made much more use of than it has been in exploring for gold dust. It is well known that one grain of gold may, by pressure, be made to cover a surface 7 in. square; it is quite conceivable, therefore, that a minute quantity, scarcely perceptible to the unaided eye, and quite inseparable by hand, may be made to assume, with the use of a moderate stamping apparatus, both distinctness and manual separability. The stamping apparatus, however, I allude to is not of high crushing power, such as is generally understood by the term, for that would destroy all malleability, but consists of a steel weight, of from 20 to 60 lbs., moving vertically in cylinders, on fixed closely-fitting horizontal bars of steel. The effect of such weights would be to give lateral extension to the gold, and to reduce to powder all the friable mineral it may be associated with, from which it may be separated subsequently by means of fine cullenders, in which the gold will be left behind, under the form of small flattened discs or buttons. This is not mere theory, for I have tried the experiment with success, and have three times extracted by hand gold from three distinct stampings, of the same sample of auriferous sand, in which little or no gold could be seen by the unaided eye before the operation. It is not, of course, intended to suggest the possibility that such a process as the above could be made to supersede amalgamating processes, but only that by its means much more gold might be separated than at present, and that it is more available to the means of the poor man.—*A. A. Hurst's Improvements in Ralls, and "T. H." (London), on Bessemer's Patent, will appear in our next. "W. F." must furnish us with his name and address before his communication can appear.*

**THE MINERS' SMELTING ASSOCIATION.**—Sir: If the information given in your last, by "Young Snelter," be correct, there is now some ground for encouragement. But as usual, the miner as a body are slow in their movements; however, the world knows what they mean when they do move, and most assuredly their move is wanted in this direction.—*CORNER: Aug. 27.*

**MINING ENTERPRISE.**—A correspondent recommends that at this present time, when machinery at several mines can be got at a cheap rate, adventurers should not endeavour to place this on old deep mines, however great their fame may be, but should rather employ it on progressive concerns, which are likely after a small outlay to pay. He further states, he is aware there are many blanks before a prize can be obtained, but he believes legitimate industry, combined with perseverance, must triumph.

**FOR TOR MINE.**—Sir: Some time since, an enquiry respecting this mine, now in abeyance, was obligingly answered by a director in your columns. As a shareholder, I should be much obliged by information as to what is now doing respecting it, or where such information can be obtained.—*QUINNESS: Southampton, Aug. 25.*

**"Inquirer" (Mold).**—The furnaces in the Ulverstone district in which charcoal is used are those of Newland, Backbarrow, and Duddon, one of which only is in blast at a time. Charcoal is not used in any other furnaces in England.

**Sir.**—Having seen in your Journal, of Saturday last, 10 shares in Devon Wheal Buller for sale, at 15s. 6d. each, I wrote on Monday to accept them at the price named. My letter has not been answered, and I therefore conclude the advertiser never had the shares for sale; if he had, he would certainly have answered my letter. I would advise all persons to have nothing to do with parties offering the public what they have not got for sale.—*S. D.: Tavistock, Aug. 28.*

**WEST CARADON MINING COMPANY.**—Although the meetings are held at No. 2, New Broad-street, the accounts are kept by the purser, Mr. Crouch, and reports of the meetings are not published until some days afterwards; hence, probably, the difficulty arises of obtaining information at the London office.

**BLANT FURNACES IN IRELAND.**—Sir: Can any of your readers inform me whether there are any blast furnaces in operation in Ireland at present, and where?—*AN INQUIRER: Aug. 29.*

**"P. M." (Birmingham).**—It is not to be supposed that on every occasion parties subscribing a deed should read it through; it is, however, always imagined that they have made themselves acquainted with its substance and tenor. In this case it would appear that, without any knowledge of the contents, the document was signed, ordinary caution not being used, and, consequently, the parties must hold themselves responsible for their own act and deed. The provisions on which the company was formed are excessively stringent, but these were known, and we must presume those who subscribed the deed did so advisedly.

**WHEAL JAMAICA.**—"W. B. and Co." (Liverpool).—Although we are promised full information by the London agent, we shall be always glad to hear from our correspondents.

**WHEAL JAMAICA.**—Messrs. Wilson, Peck, and Co., of Liverpool, will see that their suggestion has been attended to in another column.

**CENTRIFUGAL PUMPS.**—Those of Gwynne and Appold can be seen in operation in the Machinery Court of the Crystal Palace, when any one who possesses the least mechanical knowledge will see, at a glance, the difference in the working of the two. In the *Mining Journal* of August 16 we gave a detailed description, and pointed out the greater utility of Gwynne's pump; and our judgment has been confirmed by the opinion of several well-known scientific gentlemen, as well as practical engineers. It is certainly not a fair tribunal, where the judge is a rival inventor; and whatever extraneous influences he may possess, it is, to say the least, bad taste to debate a public position to gratify a private pique.

\* The MINING JOURNAL can be procured at our office by Eleven o'clock on Saturday morning. Newsmen, therefore, can make the necessary arrangements to have the Journal at the several stations in time to forward by the mid-day trains, enabling many of our subscribers to receive their copies on the day of publication.

## THE MINING JOURNAL. Railway and Commercial Gazette.

LONDON, AUGUST 30, 1856.

As briefly intimated in our last, the inquest on the 114 men who were killed in the Cymmer Colliery, terminated on Aug. 21, and, after an investigation of 13 days, has resulted in a verdict of manslaughter against the manager, overman, and three firemen.

Great credit is due to Mr. OVERTON, the coroner, for the very able and impartial manner in which he has discharged his onerous and important duties, and we trust that his example will not be lost on other coroners, but will induce an improved system of conducting the business of these courts, not only in South Wales, but in all the other mining districts of the country. It has but rarely happened that such great satisfaction has been felt by the colliers in the verdict of a coroner's jury, or in the fair and straightforward manner of the investigation, as in this case; and this inquest will have a salutary effect, not only in preventing the recurrence of such accidents, but in reassuring the men that the protection of the law is not a mere illusion, but a real practical good.

The great mass of evidence given at the inquest abundantly proves the justice of the verdict, as far as it goes, but it is a question whether it includes all who are responsible for this sad destruction of human life. The exhibition which has been made of the management and ventilation of this colliery, shows such a state of things as is utterly disgraceful to all concerned; nor do we recollect ever to have read of such a reckless persistence in disregarding all those well-known means, the adoption of which are essential to the safety of the workmen. Some of the local papers tell us, that other mines in that neighbourhood are conducted upon the same system, and that bad management and imperfect ventilation are not confined to the Cymmer Colliery. If this be so, it is to be hoped that the owners and managers will profit by what has occurred, and lose no time in taking measures to avert those terrible consequences of mismanagement and neglect which, sooner or later, are sure to ensue if such a system be persisted in.

The Cymmer explosion is to be attributed to incompetent management, bad ventilation, and the non-existence of rules suited to the peculiar circumstances of the colliery. Upon these several subjects we propose to offer a few observations, grounded on the evidence given at the inquest. As to the management, the evidence of Mr. INSOLE, one of the owners, is certainly very extraordinary, to say the least of it. He is reported to have said: "I take no part in the management of the collieries. Mr. JABEZ THOMAS is my general manager; I consider Mr. JABEZ THOMAS the responsible manager, and I trust the whole control over the other men to him. I believe Mr. JABEZ THOMAS is the best mining manager in the district." This is Mr. INSOLE's evidence, but Mr. JABEZ THOMAS himself says: "My duties are exclusively above ground. I only went underground on particular occasions. I went down about 18 months ago. I do not consider myself a mining engineer, not having been brought up to underground work; nor do I consider myself competent to undertake the management of the underground work of a colliery." Both Mr. INSOLE and Mr. THOMAS attempt to show that Mr. HAY, and subsequently Mr. GREY, were employed as the mining engineers of the colliery; but the evidence of both these persons clearly show that they were merely employed to measure the work, and in the office, but that they had no part whatever in the management and direction of the underground works.

According to the evidence of Messrs. HAY and GREY, and to the concurrent testimony of many other witnesses, the executive management of all the works underground was vested in and exercised by Mr. JABEZ THOMAS. The acknowledgment of his incompetency is too evidently based on a true estimate of his own acquirements, for the whole mass of evidence strongly confirms it. It is difficult to conceive how Mr. INSOLE should remain ignorant of this important fact, and it is inconceivable, knowing, as he must have known, that his was a fiery colliery, how he could entrust the safe keeping of his 150 workmen to a manager who "did not consider himself competent," who rarely went underground, and knew nothing of what was going on, or of the state of the mine, save what was told him by others. Not sharing in the dangers of the poor men, he listened with apathy to the expression of their fears, and turned a deaf ear to the suggestions which were made to remedy the evils complained of. This, we believe, arose from ignorance, both as regards the real state of the colliery, and of the proper measures which ought to have been adopted to secure the safety of men entrusted to his charge.

This colliery is, we understand, a highly remunerative one, the owners, therefore, have no excuse for ill-judged parsimony, either as it relates to the employment of competent agents, or for not conducting their works in such a way as to prevent the occurrence of such a dire calamity as has befallen their workmen; and whether the concern be a profitable or a losing one, they are bound to provide for the unquestionable safety of the men they may employ.

That this was not the case in the Cymmer Colliery has been unequivocally proved. The mine was a fiery one, and it was well known to be so. The fire-damp was heard hissing out of the coal, the flames of the candles were capped, and all the other well known symptoms of the presence of fire-lamp were notorious. Yet, this dangerous gas was not given out in such large quantities as in some collieries, nor did it require any great

ventilation to render it harmless. The danger did not arise from the large quantities of gas produced, but from the neglect of the ordinary means of diluting and dispersing it. As compared with other fiery mines, the amount of ventilation required was only small, and to the witnesses conversant with the subject, it appeared that there was no difficulty in obtaining it, provided the proper means had been resorted to. So long ago as 1852, the manager was warned by the late inspector of this district of the dangerous condition of the mine, and suggestions were made as to the best method of improving the ventilation. These were repeated again and again, so long as Mr. MACKWORTH remained in that district. In reply to a query in reference to this subject, Mr. J. THOMAS says, "I do not recollect, but I think it was thoroughly decided to have a communication (as recommended by Mr. MACKWORTH) between the two pits. We had it in our minds to do it, and an arch was made for the purpose. It is not yet decided how the ventilation is to be carried out." It is not too much to say that this unfortunate and fatuous indecision cost 114 men their lives.

The highly dangerous state of the colliery, it appears, was well known in the neighbourhood; and it is to be regretted that, although residing within a short distance of it, the present inspector never visited it until after the accident. And it is still more to be deplored that these hapless men should not only have been exposed to dangers consequent upon a violation of the general rules as established by law, but they should also have been deprived of the advantages which proper special rules would have afforded them. From the evidence, it appears that Mr. INSOLE received special rules adapted to the state of the colliery from the Secretary of State, to which he objected. This was in December or January last. "The matter," it is said, "remained in abeyance some time. After Mr. EVANS was appointed inspector of the district, Mr. INSOLE proposed the rules of another colliery; Mr. EVANS did not object to them, and, on being sent to the Government, they were approved of, after some delay." Aside from other considerations, there appears to have been great irregularity in the whole proceeding. According to the Act of Parliament, the rules first received from the Government ought to have been objected to by Mr. INSOLE within 20 days of his receipt of them. As they were not so objected to, they are by law the rules of the colliery, although in practice they have been superseded by other rules.

It ought to be remembered that the rules which have been thus illegally superseded, were rules for fiery collieries, and contained special provisions for the safety of the men working, as they were in this mine, in a fiery atmosphere. The following is the evidence of the manager, Mr. JABEZ THOMAS, regarding the rules now in use:—

**THE CORNER:** Do your rules refer to safety-lamps at all?—**WITNESS:** I think not. **CORNER:** Are not all the usual rules in reference to gas, and in use in other collieries, entirely omitted from your rules?—**WITNESS:** They are. **CORNER:** There is nothing said about gas in your rules,—what are called gas clauses are entirely omitted, I believe?—**WITNESS:** They are.

On being examined by Mr. OWEN, Mr. EVANS, the present Inspector, is reported to have said, "The rules now in use are good." He was then very significantly asked, "How old are you?" and his answer was, "I am in the 28th year of my age."

It is really a grievous thing to reflect that laws enacted for the express purpose of preventing such wholesale sacrifice of human life, and for which, in a great measure, they are well calculated, should be rendered inoperative, as has been exhibited in this instance. There is no difficulty in assigning the deaths of these men to a violation of the law,—both as relates to the parties implicated by the verdict of the coroner's jury, and by others who are amenable to other jurisdiction. We earnestly hope that the thorough investigation which has been made in this instance, and the free expression of public opinion which has appeared in the public press, will have a beneficial influence, both on the owners and managers of collieries, as well as in higher quarters, where great responsibility most undoubtedly rests.

It is now about three years since the important subject of the VENTILATION OF MINES occupied a large space in our columns, and a discussion of great interest was maintained for some time by the most eminent colliery engineers in the country. Few controversies have been attended with more beneficial results. Before that period the scientific principles involved, and the best systems of ventilation, were known but to a few of the leading engineers; whilst the great mass of colliery managers were either totally ignorant of, or but very imperfectly acquainted with, the theory and practice of ventilation. The efforts of Mr. GURNEY to introduce his high-pressure steam-jets, induced a strong opposition from those who had long been accustomed to furnace ventilation, and who, with a conservative feeling, originating from old and long-continued associations, "exhausted old worlds and imagined new," in defence of that "venerable institution," the furnace.

Some time before the occurrence of this memorable war between the furnace and the steam-jet, another motive power of ventilation had been discovered, and attracted some little attention. No attempts were made to compel its adoption, by endeavouring to obtain the sanction and recommendation of parliamentary committees, as in the case of the steam-jet, and in consequence it has not attained equal notoriety. It has, however, we are glad to learn, been making quiet but sure progress; and wherever it has been employed has never been discontinued, and has invariably given great satisfaction.

The terrible consequences of bad ventilation have been so calamitously exhibited by the explosion in the Cymmer Colliery, and in other recent instances, that we have great satisfaction in giving all the publicity our columns will afford to any plan by the adoption of which such crying evils may be prevented.

Without entering into a detailed examination of the merits or demerits of the furnace system of ventilation, we may be permitted to observe that in many cases its use is unobjectionable, and that its efficiency is unquestionable. In other instances (as at Duffryn, where it was the cause of the explosion, and at Cymmer, where its power was too feeble), it betrays the trust reposed in it, and kills where it ought to cure. It is far from being of universal application, and a grave responsibility is inseparably connected with its use.

There is one very important circumstance, which is too often overlooked in furnace ventilation, and that is the difficulty there is in increasing the motive-power as the colliery enlarges and the resistances increase. This was strikingly exemplified in the Ynis David Colliery, as is shown by the evidence of Mr. MACKWORTH, given at the recent inquest. When he examined this mine, two or three years ago—the works at that time not being very extensive—he found a ventilation of 14,000 cubic feet per minute; but after the explosion, owing to the extension of the works, and the consequent increased resistance, he found the ventilation only 6000 cubic feet per minute; and it was to this decreased amount of air passing through the colliery that the explosion was attributed. With Mr. STRUVE's machines, the total ventilation remains the same, or may be augmented, under all circumstances.

The ventilation must necessarily decrease with the resistances when the furnace or the fan are the prime movers—precisely as a given column of water can only create a given discharge, which would decrease as the resistances increased, though the column remained the same. The steam-engine would always give out increased power in proportion to the resistances, and either keep the ventilation at a constant quantity, or augment it when required.

With these convictions, we contemplate with pleasure the proved efficiency of Mr. STRUVE's patent mine ventilator, which appears to us to possess all the good qualities of the furnace without its dangers, besides many obvious advantages peculiarly its own. A large machine of this description has been erected by the Governor and Company of Copper Miners at the Cwm Avon Collieries, and commenced on Aug. 12. These mines have hitherto been ventilated by the immense chimney which conveys the fumes and smoke of the copper works to the top of the adjoining hill, and which is 1200 feet high, 180 square feet area, and of an average temperature of 250°. It, therefore, may be regarded as the most gigantic and powerful furnace-ventilation known; yet not many weeks ago we had to record the occurrence of an explosion in one of these collieries, attended with a lamentable loss of life. This patent ventilator is, we understand, one of the largest and most perfect that has been erected, and reflects great credit not only on the patentee, but also on the highly-respected managing director, W. GILBERTSON, Esq., for the liberal expenditure he has incurred to insure the safety and comfort of the men whilst pursuing their dangerous occupation. The machine consists of two pistons, each 18 feet in diameter, which are capable of pumping 80,000 cubic feet per minute. The area of the valves is 1200 feet; the tanks are made of corrugated iron; the pistons have double roofs, and the piston-rods are made of red pine 9 in. square. The machine may be entered by double doors, and light is admitted through windows in the wall, so that the construction



of these gigantic pumps may be contemplated at leisure. This ventilator is well worth a careful inspection.

The machine is at present only in connection with the Yais David Colliery, the colliery in which the recent explosion occurred, and although only working to half its power, it has increased the ventilation from 5000 to 40,000 cub. ft. of air per minute. On being set to work, its rarefying power was so great as to extract the noxious air from the old workings and goaves, which was very foul when expelled at the surface: the air which is now brought out of the mine is comparatively pure.

The superiority of this mode of ventilation over that of the furnace cannot now be questioned. Eight years have elapsed since the erection of the first ventilator at the Eaglesbush Colliery, and during that period it has worked well and satisfactorily. Equally gratifying results have attended its use in the other instances mentioned below.

The very important question, as to the possibility of so ventilating collieries as to prevent explosions, has now been demonstrated, and we trust that the knowledge of this fact will not be unheeded. We subjoin a list of Staubs' ventilators now at work, and hope to learn of their being more extensively adopted; for with their use we confidently predict the prevention of those dreadful accidents in our collieries, which of late have been so numerous and appalling:—

Where situated, and size.	Been at work.	Cost, without engine.	Cub. ft. per min. Air exhausted.
Eaglesbush Colliery, 2 cyl., 12 ft. dia.	5 years	£300	30,000
Westminster Colliery, near Wrexham, 2 cyl., 17 ft. dia.	5 "	700	60,000
Tye, Glamorgan, 2 cyl., 16 ft. dia.	3 "	600	50,000
Neydd Bach-y-Glo, near Swansea, 4 "	4 "	400	40,000
Midfield Colliery, Swansea, 2 "	2 "	200	16,000
Carm Avon, 2 cyl., 18 ft. dia.	3 "	800	80,000
The Middle Duffryn, 2 cyl., 20 ft. dia.	3 years	800	100,000

There is also one in the course of erection for the Neath Abbey Coal Company, of 2 cylinders, 16 feet diameter.

Another Government return has been made from the Board of Trade since our remarks of last week, on the revenue and expenditure of the country, together with the exports and imports for the last 15 years. It is a statement of the manufactured and raw materials shipped from, and received in, this country during the month ending July 31, as compared with the month ending July 31, 1855. The result is most satisfactory and encouraging, especially to our class readers, and all who are in any way connected with the mineral production of this country. The total exports during July, 1856, amounted to 9,968,226*l.*, and during the same period of last year the total was only 8,150,383*l.*, consequently showing an increase in our shipments of 1,817,843*l.*, although a decrease in seven different articles occurred, to the aggregate extent of 61,480*l.*; beer, butter, cordage, fish, glass, salt, and wool, were the different items which fell off, the first to the extent of 15,037*l.*, and the last in the sum of 34,432*l.* Had these, however, maintained their average, or the same as last year, there would have been a total increase of 1,879,323*l.*

The augmentation of exports identified with the mining interest is equal to 368,002*l.*, in comparing July, 1856, with July, 1855. During the past month the total was 2,361,832*l.*, and in 1855 it was 1,993,830*l.* This is no sudden start or isolated case of increased business, for the returns of June of this year showed a total excess over June, 1855, of 2,492,492*l.* The items of mineral exports alluded to in July, 1856, are metals, machinery, hardware and cutlery, and coals; in the first there is an increase of 232,089*l.*, the difference between 1,502,039*l.* and 1,269,950*l.*; the second shows an improvement of 71,326*l.*, the balance between 256,880*l.* and 185,554*l.* Hardware and cutlery collectively represent an excess of 57,116*l.*, the difference between 317,684*l.* and 260,568*l.*; and in coals an improvement of 747*l.* occurs, the excess of 285,227*l.* over and above 277,756*l.*, the value of coals shipped in July, 1855. From these official statements, and the various particulars which we have lately laid before our readers, it must be evident that the metal trade of this country is in a wholesome and advancing state, and if such be the case with the manufactured article it must necessarily apply equally to the raw material, and brings uncontrovertible evidence of the correctness of the opinion we expressed some time since, that a bright and important era was gradually coming upon the mining industry of Great Britain.

The comparative statement of exports for the first seven months of 1854-55-56, shows likewise an extraordinary increase. In the first, the total value was 58,500,000*l.*; in 1855, it was only 51,000,000*l.*, a falling off of 7,500,000*l.*; but we were then, it must be borne in mind, in the very height of war, and everything looked gloomy and discouraging. As soon as this state of things passed away, and peace was restored, the exports instantly recovered their temporary depression, and, indeed, surpassed the average; for we find that in the first seven months of 1856 the value was 64,000,000*l.*, an increase of 13,000,000*l.* over the first seven months of 1855, and 9,500,000*l.* over 1854. The annual average of exports for the years from 1847 to 1852 was 65,500,000*l.*, so that in the first seven months of 1856 they were only 2,500,000*l.* less than for the twelve months of the years named, and the justifiable inference is, that the twelve months of this year will show an extraordinary excess over the average.

The smelters make no concessions. Are the miners about to retrograde, or are they determined to make a stand against the monopoly which has so long enthrall them? Is the present agitation to result in nothing, or is it to arrive at any practical termination? These are the questions that are asked on all sides. Numerous communications are forwarded to us, yet nothing definite or decided appears to be concluded upon. Various statements have appeared in our columns and elsewhere, showing the profits derived by the smelter from both manufacturer and miner, yet these remain unanswered and uncontradicted.

The smelter, true to his tactics, allows himself to be assailed on all sides, yet never condescends in any way to refute the charges brought against him. He knows perfectly well that he has the lion's share, and consequently can well afford to despise the puny attempts of those whom he imagines he has entirely in his power: while in every other country the miner has rendered the smelting works and reduction establishments subservient to the producer, here it is directly the reverse. So soon as a definite association is formed, we shall feel it our duty to furnish some statistics as to the cost of a smelting establishment for the reduction of a certain number of tons of ore, and we trust we shall then be enabled to show that, if common energy and moderate perseverance are used, the miner may render himself independent of the smelter, and that a union between him and the manufacturer must be beneficial to both. The monopoly of the smelters is of no recent origin, and it may not be out of place to quote here from a well-known work, published so long since as the year 1778, which will show the feelings then entertained:—

By this method, which has subsisted since its first establishment to the present time, 16,000*l.* worth of ore are monthly disposed of in entire dependence upon the honour of the purchaser, which is, I believe, not to be paralleled in Great Britain. *See his memorial at crator et tutor.* Permit me, for argument sake, to suppose these gentlemen acting on the most honourable principle, yet still there is an unavoidable inconvenience which may be of the most destructive consequence to the seller; what I mean is this, whenever a purchaser does not want a particular parcel of ore, or perhaps, does not mean to purchase it at all, it is usual for the agent of that company to affix a price on his ticket much below his computed value of those ores. On the supposition of non-communication between the buyers, which is the only footing on which the favourers of the present system rest their cause, it must frequently happen that all companies must be in the same predicament with respect to some parcels of ores, the consequence is, these ores go off at a low value, and become the property of persons who did not mean to buy them. This is putting the case in the fairest light, and to conceive the mischief which follows, we are to observe that those parcels amount to very capital sums of money, and the loss sustained by the proprietors is proportionately large. I have mentioned above the emulation natural to rival companies, but it is to be feared the principle has long ceased to operate; as there is copper ore raised in the county sufficient for them all, they do not wish to push one another. On the contrary, the utmost harmony seems to exist between them, and the talk of establishing a new company is sure to be followed by an association of the old ones in order to defeat it. I know it has been urged that large quantities of copper ore lie at the several furnaces unsold, and that much copper remains unsold; admitting this argument, let us for a moment consider the benefit of these pretensions to the purchaser. He thereby pretends that he is buying copper which must remain on his hands, and by way of allowing himself interest for his money then lying dead, he has the modesty to seek the raw commodity from 12 per cent., which is a very handsome profit upon a merchandise unperishable, to 30, and more frequently to 40 per cent. It is a great pity that the amazing monthly expense of deep mines, joined to the narrow circumstances of many of those concerned in them, should make it necessary for those mines to sell their ores immediately for the price they can get, as the withholding of those ores at a profit of 20 or even 10 per cent. would make a great difference in their favour on the balance of their accounts; but I forbear to dwell longer on this disagreeable subject, as I am convinced that most of the people concerned in mining have long beheld with indignation the treatment they meet with, and only want a leader to stand forth in their cause. I proceed to observe, in justice to the buyers of copper ore, that no payment for any commodity is more regular than that which is made by them. I cannot recollect one instance of tardiness in all their transactions respecting their payments, for at the month's end after the ores are weighed off, cash or bills of exchange, almost equal in credit to bank notes, are ready for the sellers' use; this

custom makes copper ore a ready money article, which is of the greatest consequence to the necessities of miners, and in truth cannot be dispensed with unless the system of mining be quite changed.

However, it must be confessed that the purchaser receives some gratification to counterbalance his politeness, for every ton of ore must weigh 21 cwt.; moreover, ore that is wet by rain is allowed a further over-weight, according to reason and conscience. At Polyease Mine the managers will not allow more than 4 lbs. upon every 3 cwt., be it wet or dry. The samplers demand to this regulation, and contend for 4 lbs. upon dry ore, and as much more as they can have for wet. Whoever approves of this regulation must be an enemy to the county of Cornwall; for these allowances of 1 cwt. upon 20, and 4 lbs. upon every 3 cwt., which is 1 qr. upon the ton (all together equal to 6 per cent. on the foregoing profits), are more than ten times equivalent for all the wet and waste they can acrimoniously pretend to suffer. Such is the present oppressed state of the copper trade in Cornwall.

Altering the date, the same remarks are equally as apposite now as they were then; we perceive the same combination, a like grasping monopoly, and the fixed determination to dominate the market. The evil has now lasted nearly a century, and it is high time that some remedial steps should be taken. An old proverb says that "Heaven helps those who help themselves," and this trite truism no one will deny. This is an age of progress: through the medium of the MINING JOURNAL the miners have been shown that the erection and establishment of independent smelting works is feasible. We are not to dictate the methods by which their freedom is to be achieved; the evil under which they have long laboured is not of a single year's duration. The rottenness of the system is acknowledged by all, with the exception of those who have so largely profited by it: if any confirmation of this is required, it is to be found in the uniform silence of the Swansea clique. They have been attacked; charges brought against them; they have had opportunities of refuting those offered them; yet on all occasions they have not deigned to notice them; while mines have been ruined, smelting works have revelled in plethoric gains at their expense. We by no means are of opinion that these last should not have a fair share of profit, but we protest against the principle of their enriching themselves at the expense of miner, manufacturer, and consumer. Whatever modifications they may now offer will be but for awhile; so soon as the agitation is passed, and should it tend to no practical result, it will be but strengthening them; they will combine still more strongly together, and the miner will only obtain such a price for his produce as they think fit to give.

The copper ore trade has not been regulated as other branches of commerce are; the seller for nearly a century has been at the mercy of the purchaser. We wish no unfair advantage on either side. The only way we can see for the miner and manufacturer to render themselves independent of the middle-man is to support works where moderate profits can be realised, and justice equally meted out to all concerned.

Continuing our statistical remarks on the different branches of British industry, as respects the capital invested and the beneficial results, with a view of showing the fallacy, as well as injustice, of the generally received opinion that mining is not a profitable investment, we proceed to enumerate other sources of commercial employment of money. We have already alluded to land, navigation, and gas companies or associations. Pursuing the same line, we find that six metropolitan water-works companies have absorbed a united capital of no less than 2,921,316*l.*, and that the highest rate of interest is 6 per cent., with the exception of the Grand Junction, which is 8 per cent. The East London pays 6 per cent. on the original stock; but the new shares of the same association receive only 4 and 5 per cent., for there are two kinds. The West Middlesex divides 5 per cent. on their stock, but only 4 per cent. on their new shares, of which they, likewise, have two different issues, or descriptions. The Lambeth and Southwark both divide 5 per cent., and the Kent 4 per cent. The stock of the Grand Junction bears a premium of about 24*l.*, and the East London 11*l.*; but all the rest are quoted at a heavy discount—varying from 6*l.* to 20*l.* in 100*l.* Taking the aggregate capital, as amongst these six companies, it will be found that the average outlay is 486,886*l.* per company; but, individually, they vary between 115,000*l.*, the outlay of the Southwark, and 1,018,766*l.*, the disbursements of the West Middlesex. The total absorption of capital of these six water-works companies is only about one-third less than that of the whole of the 350 mines enumerated in our former articles on this head, and more than twice as much as the money occupied in the 94 dividend-paying mines; the difference being that the water-companies divide 4, 5, and 6 per cent., while these mines yield at the rate of 20 to 30 per cent. at their present quotations at high premiums.

We find 22 canal companies enumerated in the general lists. They represent an aggregate absorbed capital of 8,493,789*l.*, which is equivalent to an average of 386,354*l.* per canal; but, individually, they vary from 30,000*l.* to 1,260,050*l.* The lowest is that of the Macclesfield, and the highest is the Grand Junction. The others are the Ashton and Oldham; Brecknock and Abergavenny; Burnley; Birmingham, Gloucester, and Berkeley; Grand Union; Kennet and Avon; Lancaster; Leeds and Liverpool; Leicester and Northampton; Oxford; Peak Forest; Regents; Rochdale; Severn and Wye; Stafford and Worcester; Stourbridge; Warwick and Birmingham; Wilts and Berks; and Worcester and Birmingham. In these undertakings the interest varies very considerably. The Lancaster, for instance, is quoted at 17*l.* 6*d.* per share dividend on 47*l.* 2*s.* 6*d.* paid; and the Stafford and Worcester at a dividend of 14*l.* per share, half-year, on 140*l.* paid; and, consequently, the one is at a discount, and the other commands a premium of 280*l.* to 300*l.* per share. Again, the Kennet and Avon is set down at 3*s.* dividend per share on 10*l.* paid, and the Leeds and Liverpool at 25 per cent., therefore the former is quoted at 6*l.* per share, or 34*l.* per share discount, and the latter at 486*l.* to 490*l.* per share, or 386*l.* to 390*l.* premium. Several are at 4 and 5 per cent. dividend, so that here, then, we have not anything to supersede our assertion that mining keeps pace with, and even outstrips, other sources of enterprise. Some of the canals show, undoubtedly, most encouraging results, but yet nothing, positively nothing, when compared to special mines. Let us, therefore, try further.

It appears that eight dock companies have abstracted from the public no less a sum than 9,635,878*l.*, which is equivalent to upwards of 1,200,000*l.* per dock; yet the highest rate of interest yielded to the shareholders is 6 per cent., which is by the East and West India Company, after laying out no less than 2,065,668*l.* The others vary from 4 to 5 per cent.; they are the Commercial, London, St. Katharine, Surrey, Southampton, and Victoria. Here then, again, we see that only eight dock companies occupy a capital of three times more than 350 mining companies, and nearly seven times more than the 94 dividend-paying mines—namely, 9,635,878*l.*, as against 1,403,929*l.*

Reference to bridges does not improve the appearance. There are four in London—viz., Vauxhall, Southwark, Waterloo, and Hungerford, which belong to joint-stock proprietaries. The aggregate capital invested is 2,262,300*l.*, which, divided amongst four, is equal to 565,575*l.* per bridge, and the dividends paid thereon amount to *nil* in all cases except Vauxhall, which is set down as 14*s.* per share on 64*l.* paid. Southwark is *nil*, Waterloo is *nil*, and Hungerford is likewise *nil*, as respects the original stock. The bonds and annuities on Waterloo bear interest, and the new shares of Southwark are represented as receiving 10*s.* per share on 50*l.* paid. The price of Southwark (old stock) is only 44*l.* to 5*l.* on 100*l.*; Waterloo, 3*l.* 5*s.* on 100*l.*; Vauxhall, 20*l.* on 64*l.*; and Hungerford, 7*l.* to 8*l.* on 25*l.* paid. It is not in investment in bridges, therefore, that we are to meet with successful competition to mining; for in this instance it is shown that four bridges have absorbed a capital only one-third less than 350 mines, and 10 per cent. more than 94 dividend-paying mines.

To banks, insurances, and railway companies, we will more particularly allude in a future article, and we think it will be apparent to all that mining is more remunerative, and now that limitation is given to liability, much more secure from risk and danger. It is true, no doubt, that metropolitan banks and the established insurance companies have returned, and do return, a good rate of interest—indeed, a handsome return for original investments; but the consequence is that competition is increasing so rapidly in both these branches, that either failure must sooner or later accrue on the one hand, or great deterioration of benefit must be submitted to on the other. The establishment of joint-stock banks and insurance companies is the mania of the day, especially as respects the former, and the day of reckoning will come.

There is no legitimate business, or any justifiable grounds that we can see, for this sudden and extensive augmentation of banking in the metropolis; and the next great panic will, we think, be in this description of commercial enterprise. Then, indeed, it will be woe to the shareholders! No legislative enactment limits their liability; every proprietor will be responsible to the full extent of his resources, and inevitable ruin will result to those who have not ample funds on which to fall back. Many sagacious men consider that the day is not far distant when we shall see these things. While money continues dear, banks can, of course, find profitable use for their capital; but when it falls to 2*l.* or 3 per cent., which it is confidently expected will be the case before Christmas, how

will these large masses of money prove sources of profit? The same expenses of direction and management must go on, the same rents must be paid for gigantic parent establishments and numberless branches; and yet the legitimate source of business, as respects the production of profit on capital, will fall off in the rate of 6 and 5 to 3 and 2.

The heyday of insurance companies has almost passed; nevertheless, great have been the efforts to establish new undertakings, and numerous indeed are the failures which present themselves, either in the shape of total bankruptcy, or of "winding-up" in Chancery, to the frightful discomfiture of those who have embarked their money as shareholders or insurers. There is one main thoroughfare in the metropolis which is quite notorious for defunct or expiring insurance companies. The low state to which this branch of commerce has descended, as regards new associations, cannot be better evidenced than by the fact that a person who applied for the situation of "hangan" to Dove gave in as his credential for the office his appointment as agent for a London insurance company—a shock enough of itself, as facetiously remarked by a correspondent, to crack all the "plate glass and crockery" in the metropolis; for to such an extent is business catered for, and risks run, that domestic breakage of glass and china of every description may be now "underwritten" or insured against.

Railways do not take a higher standing in reference to results, as compared with promises and expectations. The poverty of their dividends is notorious, even as regards original holders, and the amount divided among the shareholders is literally as nothing to those who purchased during the railway mania, at almost fabulous quotations, as compared with the legitimate sources of revenue. But of railways, insurance companies, and banks, we will say more anon, and of many miscellaneous undertakings; having in view, as at starting, a desire to disabuse the public, by statistics and other facts, from the impression that mining is hazardous, but that when legitimately pursued it is as good and as sure an investment, if not better, than any other branch of British industry.

An elaborate report upon the operation of the Act 5 and 6 Vict., cap. 99, by Mr. HUGH SEYMOUR TREMERE, has just been issued, from which it appears that there is still a necessity for a measure to compel all boys between 10 and 14 years of age, who work below ground, to attend some school for 100 hours every six months. The opinion of nearly the whole of the resident managers of the great iron and coal works in the whole district from Llanelly to Pontypool was taken, and scarcely an objection to such a measure was met with, but, on the contrary, an all but general and readily-expressed conviction that it would be of great service both to the labouring mining population and to their employers. As a general rule, throughout the mining districts, the growing lads who attend evening schools are a very small minority, and but few of these arrive at such a point as to be able to use what they have learnt for the purposes of real self-instruction; they consequently go to swell the numbers of that vast crowd of labouring men who have no other resource from the monotony of labour but sensual pleasures and religious excitement. A simple enactment of the Legislature would correct this as regards that part of the population of the mining districts, now under consideration.

The spirit actuating the majority of the employers of labour in the mining districts of Monmouthshire and Glamorganshire in reference to their responsibilities to the labouring population is now unquestionably of a much higher kind than formerly. The Ebbw Vale Company has expended upwards of 3000*l.* in the erection of a magnificent building for the purpose of affording means of instruction and intellectual gratification to the large mass of people assembled round their Ebbw Vale and Victoria Works. The liberality of the Rhymney Iron Company is also conspicuous in the provision they are making for the education and improvement of the large population gathered round their works.

The information with regard to the recent strike in Scotland is particularly interesting. It is calculated that the loss of wages to the colliers and miners alone during that strike was at least 50,000*l.* "The men" may be classed into three parties. About one-third are, from their more mature age, steady habits, and the enlightenment of their understandings, averse to strikes; they have seen the ill effects of former ones; are able, by their steady industry, and not dissipating their earnings in drink, to live comfortably; and have learnt to judge temperately and correctly of the occasions when they have a right to expect that their wages should be increased, and when circumstances require that they should be lowered. Another third consists of those who are always most ready to believe they are unfairly dealt with by their employers, and to follow any extreme course that agitators and "delegates" may suggest. They are for the most part either young men without experience, or men who have not long come from Ireland, or from other parts of Scotland, without local ties, with but little, if any, knowledge of the character of their employers, whom perhaps they have rarely seen and never spoken with—not the most orderly, well-behaved, or industrious of their class, and not willing, even if able, to take a calm and just view of the questions that may be at issue at the moment between themselves and their master. The remaining third is composed of men who profess that they are not dissatisfied with their employers, and that they are willing to go on working at the terms he offers, but who say they are compelled to do as others do; that they are sorry to be obliged to remain idle, and would go to work again if they dared.

A remarkable instance of the intelligence and good judgment of the colliers and miners of Fifeshire occurred at the time that the strike was in progress in Lanarkshire and elsewhere. A difference arose between themselves and their employers; when, instead of committing themselves to the imperfect guidance of a man of their own class, they held meetings, and appointed a Writer to the Signet; and, after making him acquainted with the nature of their complaint, instructed him to represent their case to the law agent of the masters. The dispute was satisfactorily settled in a few hours. The results of the strike are stated, by those who have had experience of strikes for nearly 30 years, to be diminution of crime, attributed to there having been less money to spend upon ardent spirits, and the consequent decrease of drunkenness, disorderly conduct, disease, and demoralising effect upon the habits of the men.

In our last Journal we alluded to the dissolution of the ANGLO-CALIFORNIA GOLD MINING COMPANY: we there briefly stated the causes which had brought about this consummation; to these we will not again refer, but shall simply confine ourselves to the facts that are now before us. The late company expended in California a capital of about 65,000*l.*; the association incurred liabilities to the amount of some 14,000*l.* more; the shareholders were applied to, but did not respond, the directors, therefore, had no other recourse but to wind-up the company, or adopt such measures as they might deem necessary to extricate the association from the dilemma in which it was placed. To save the old company was impossible, they accordingly determined to form a new association. This is to have a capital of 32,000*l.*: of this sum, in order to clear off the liabilities of the old company, and pay for the preliminary expenses of the new, the directors are to receive 16,000 shares of 1*l.* each. In the meanwhile, the old shareholders are not forgotten: instead of being called upon to pay for any of the debts of the company, they are now offered for every four shares they take a bonus of one, thereby giving them five on the payment of four; the advantage of this must be manifest to them all. True, it is, they have lost their original investment, but it must be understood the profits will now only have to be divided over a capital of 32,000*l.*, instead of 90,000*l.*, as would have otherwise been the case; and although the profits may not be so large as was anticipated by all in the flourishing days of gold mining, there is hope they may yet not only recover what they have lost, but get rid of their liabilities, and still obtain a profitable return for their investment. It is neither our wish nor intention here to canvass the past management of the old company. The superintendent now appointed (Mr. FRANKED) has been for some years resident in California, has great practical experience in gold mining; and, from his local knowledge and known skill, will avoid the errors which in a great measure so tended to retard the development of former operations. It is an acknowledged fact that hitherto the methods by which the gold has been obtained are very imperfect, and in the manipulation much has been lost; and hence probably has arisen the discrepancy between the assays and results. A better system has now been introduced, and this it is the intention of the directors to carry out in California: hence the hitherto serious loss of gold will obviate.

The shareholders will see that the steps adopted by the directors have been the best for the general weal; the machinery is in good order, water can be obtained at all seasons of the year; and it is only economical management and perseverance that is now necessary to place the company in a position to make remunerative returns.

It must be borne in mind, that although the sum of 65,000*l.* has been expended by this company, there are others who have dissipated their capital and yet have not been able to show such results, however un-



favourably they may be considered. From the first commencement, the Anglo-Californian Gold Mining Company had great difficulties to contend with; these they overcame, and with the locality they obtained, had they had efficient and prudent superintendence on the spot, the probability is that more favourable conclusions would have been arrived at.

The new association, it is hoped, will profit by the experience derived from the old company; both directors and shareholders are now grown wiser, and are perfectly aware of the adventure they are about to embark in; past errors will be avoided, erroneous calculations will no more be received; theory has given way to practice; and there is every anticipation that, under a new system of working, practically carried out, a favourable solution of the question of quartz mining will be arrived at, and the shareholders of the old company will be repaid their losses in that, by investing in the new association, which is founded on the one on which they have already expended so much capital, and rendered one of the best plants in California.

The extension of the principle of limiting the liability of shareholders in commercial undertakings we have always advocated, and the JOINT-STOCK COMPANIES ACT, 1856, has been so fully elucidated in the MINING JOURNAL, that our readers have had ample opportunity of judging of its merits, and we believe it to be very generally considered as a most important measure, calculated to benefit, in the greatest degree, legitimate enterprise. In the formation of a company, however, under this Act there are several matters which require particular attention; amongst these we may allude to the limitation of the powers of directors, the calling up of capital, and use of proxies. With each of these matters every intending speculator should make himself thoroughly acquainted before investing, as neglect on his part may cause him to regret, when too late, his connection with worthless and unprofitable concerns.

With regard to the limitation of the powers of directors, we do not intend to assert that they should be so fettered as to place authority entirely in the hands of the shareholders, as such a step would undoubtedly have the effect of damaging the best interests of the company, from the simple fact that in many instances an act which an individual trader would do, or decline to do, in five minutes, would take the shareholders in a company as many weeks, by which time the circumstances under which it was desirable to decide upon the course to be adopted would have been entirely changed. We contend that power should be given to the board, or even to the manager, to exercise his discretion within a certain limit, but that that limit should be so fixed that, whilst it gave the officers every facility to act to the company's advantage, they should not be permitted to act recklessly or dishonourably to any considerable extent, or enter into contracts of a magnitude which the shareholders considered undesirable.

As to the calling up of the capital, it has been facetiously observed by a member of the legal profession that, although it is not necessary that any portion of the capital should be paid, it is the most prudent course to require the full amount of the share to be paid as soon as possible after business is commenced, as from there being no liability beyond the nominal amount of the share, it permits the directors to speculate freely; whilst the shareholders have no consequences to fear. But to every right-thinking person it must be apparent that this mode of procedure is absolutely suicidal to the interest of the company, as it renders it an irresponsible myth in the eyes of the traders from whom it requires credit. If, on the other hand, provision be made in the Articles of Association that not more than four-fifths of the nominal capital shall be called up until after the Court has made an order for winding-up, the credit of the company will be preserved, from its creditors having the assurance that, in the event of failure, there will be at least a small dividend, and that the risk of loss is no greater than in dealing with an individual.

In order to prevent an operation of frequent occurrence under the present system, that of the directors unfairly outwitting the shareholders by the use of proxies, paragraph 38 of table B should be strictly adhered to; and in addition thereto it should be provided that no shareholder shall hold more than from two to five proxies, according to the number of shares into which the company is divided. Every proxy paper should have a 6d. stamp, and by the terms of the Act no proxy is valid after the expiration of one month from the date of its execution. These, of course, are not the sole objects to be looked to in examining into the constitution of a company, but attention to even these particulars only, may aid greatly in allowing of a correct opinion being formed, and prevent much unnecessary anxiety and regret.

#### THE MINING AND INDUSTRIAL INTERESTS OF CORNWALL.

[FROM OUR CORRESPONDENT IN WEST CORNWALL.]

Aug. 28.—The mining share market, although not very active, presents some favourable symptoms, especially in the shape of more numerous enquiries for shares, and the increased caution evinced by purchasers, many of whom appear to be persons who are embarking in mines as matters of investment, and not for jobbing purposes. It is to be regretted that gentlemen resident out of Cornwall too often exercise so little care in their mining speculations. Without due enquiry as to the character of the parties concerned in the management of mines, and the financial position and state of the workings, and the objects in view likely to be realised, how can it be reasonably expected that the results will be successful? And yet, how often do we find gentlemen who know nothing of Cornish mines recklessly plunge into them, on the faith of some highly-coloured report; when, instead of becoming suddenly rich, as they expected, they speedily lose their money, retire from mining, and ever afterwards abuse it, and give the pursuit a bad name, and all who are connected with it. Whereas, had these same gentlemen exercised the precaution they would have done in entering an ordinary trading partnership, and had the financial and underground condition of the mine duly investigated before they became partners therein, they would probably have spared themselves much loss, and a great deal of excited feeling. Though mining will always, from the nature of the pursuit, involve some risk and uncertainty, the losses therefrom would be far less if those who wish to become shareholders would first obtain the opinion of some agent of ability and experience, who has a character to maintain, and who would give an honest report, and his best advice as to the desirableness of purchasing any particular shares.

East Pool bi-monthly account was held on Monday, when a dividend of 5d. per 128th share was declared, the balance in hand also showing a considerable increase. The previous dividend was only 2d. 10s. per share. South Frances shares have been much in demand, and prices have risen to 350l. and upwards. The mine is looking exceedingly well in the bottom, and the newly lode appears likely to prove an important discovery. In Wheal Buller there is not much business doing, although the shares are comparatively low, and many persons have a strong opinion of the value of the eastern ground; shares are about 275l. Alfred Consols is opening some good ore ground in the levels east of Davey's shaft. South Tolgus shares have changed hands at about 130l. East Tolgus shares have rapidly advanced, in consequence of a discovery, and are still in demand. Boiling Well is looking more favourable, especially in the deepest level. Grambler and St. Aubyn continues to look well, and the ores are very rich; 46 tons of ore, sold last week, produced 652l. North Basset is in a very satisfactory state; shares, about 33l. North Frances is improving, has a lode in a winze producing 2½ tons per fathom, and holds out excellent prospects. Rosewarne United shares are from 66l. to 70l., and a further advance may be expected as the levels are driven west. West Rosewarne is considered a mine with good prospects, which the newly-erected engine will be sufficient to develop. Wheal Hender shares are about 4l.; South Wheal Ellen, from 8l. to 8½. 10s.; West Stray Park, another promising mine, about 8l. 10s. East Wheal Rose has fallen to 22l.; in the early part of the year these shares were saleable at 75l. Cargoll, from 29l. to 32l. per share.

The standard last week showed an improvement as compared with the corresponding week of last month. Making allowance for the difference of produce, the price per ton was between 5s. and 6s. higher than the corresponding sale in July—thus producing a difference upon the ores sold by Devon Consols last week of more than 600l.

It is satisfactory to see that the demand for manufactured copper is so well maintained, and that there is some expectation that the price will advance. But, even should it do so, and the standard go up a little more, the miners should never forget that they are still under the yoke of the smelters, and can only obtain the prices for their ores which the monopolists think proper to give them. It is a sad state for so important an interest as the mining interest of Cornwall to remain in; and it is to be lamented that there is so much want of spirit amongst Cornish shareholders in regard to this question. But as it is now said that there are

parties exerting themselves out of the county, with the view of getting up a new smelting company, it is to be hoped that, when the matter is more developed, the Cornish mining shareholders will promptly come forward to afford it their support.

Several of the tin mines of Cornwall are now doing very well. Black tin continues at a high price per ton. The slight fall in common and refined tin is not likely to affect the value of the shares of the mines, many of which, at the present time, are quoted at an extremely low price, considering their development and the prospects before them.

The West Cornwall Railway Company have issued their half-yearly report, in which the directors state that the rate of increase in the gross receipts, which in the early part of the half-year amounted to 100l. per week more than during the corresponding period of 1855, has unfortunately not been maintained throughout the whole of it. The very late spring, and the cold weather in the early part of the summer, materially affected the passenger traffic; the total receipts for the half-year, however, are 1027l. 1s. 11d. more than those of the corresponding period of 1855. The copper ore and coal traffic have produced much about the same results as in the corresponding period of 1855, while in the general merchandise traffic there is on each half-year a steady and continuous increase. The working expenses are less than those of the half-year ending June, 1855, but exceed those of the half-year ending December last; this is accounted for by the diminished receipts on passenger traffic, on which the expenses remain the same. The directors remark that the ultimate prosperity of the company must necessarily depend, to a very great extent, on the completion of the Cornwall line between Truro and Plymouth; and they think the progress now made in the works of that line gives every reason to believe that the time is not far distant when this result will be realised. The directors further allude to the searching enquiry which has been made into the affairs of the company by a committee of investigation, when no substantial reason of complaint was found against its management, from which they hope that unity may exist for the future among the shareholders.

#### THE IRON AND COAL TRADES OF STAFFORDSHIRE.

[FROM OUR CORRESPONDENT IN WOLVERHAMPTON.]

Aug. 29.—The degree of improvement which I last week spoke of as characterising the demand for iron, has imparted some degree of hope to the trade with respect to the next quarter. While the first houses, whose bars have a high character for purposes in which quality is essential, have adhered to the trade quotation in that article, the second and all other class makers have been accepting rates which make the fixed price 9l. for bars—quite a nominal rate for general transactions. Iron of good quality is sold for 8l., and in some cases at even lower rates, while inferior makes are to be had for figures still further below the trade list. Whether these reduced prices are to be accepted as the trade prices for the next quarter, or whether an effort is still to be made to retain the present quotations, is a matter for anxious consideration. The advocates of upholding present rates appear more sanguine than they were a fortnight ago, although the improvement in itself is not great. The Board of Trade returns for July continue to exhibit a very extraordinary expansion in the exports of our manufactures; and the able writer of the *Times* City Article of yesterday quietly insinuates that the grumbling of the ironmasters of this district, that their expectations are not realised, is hardly consistent with the fact that metals, and iron particularly, share so largely in this increase. No doubt the two facts appear inconsistent, and call for investigation; but it must be remembered that of the export of iron, pig-iron forms a large part, and in this South Staffordshire has no share, while Wales and the north of England supply a very large proportion of the other kinds. Still, the great increase in the export of iron this year, with the limited demand here, appears only capable of being accounted for by believing that this district has not yet received its usual share of the orders sent from foreign countries. Whether this is owing to the maintenance of high prices here is a matter for serious enquiry, and certainly it behoves the South Staffordshire makers to account for the fact, that the trade is rapidly extending, while they are short of orders. The leading works are able to keep in full operation, but many of the others are only partly going on, and nearly all have a small supply of orders in hand.

On Tuesday the adjourned enquiry into the circumstances attending the late explosion at Lord Ward's Colliery, near Oldbury, was resumed. The facts of this case bring out clearly the great defect which is felt in conducting mining and manufacturing operations in this district, both in relation to the safety of human life, the improvement of the processes, and the products of its manufactures. The only evidence taken was that of L. Brough, Esq., Government Inspector for South Staffordshire, and T. Wynne, Esq., Government Inspector for the north of the county. They both described the colliery as being remarkably well laid out, the galleries of ample area, and altogether a very superior specimen of mining. Why, then, did this dreadful accident, involving the loss of ten lives, and injury to six other men, occur? On this point both were perfectly agreed. The mine was very extensive, and in order to ensure a sufficient current of air through it to dilute the gases which might escape, a furnace was necessary at the bottom of the upcast shaft. One had been placed there by direction of Mr. Spence, the manager, who went from home shortly before the explosion; directing the butty, Thomas Baker, to maintain this furnace. Baker, however, appears to have been one of those bold men who had an utter contempt for precautions. The furnace was not lighted for some days before the accident, and then, in the opinion of both inspectors, the primary regulation respecting collieries, that a sufficient current of air to dilute and render safe any noxious gases in the mine should be provided, was violated for the want of keeping up a fire at the bottom of the upcast shaft. But the regulations do not stop here. Apprehending possible failure in the means taken to ventilate pits, the 17th special rule directs that the manager, or his deputy, shall examine the state of the workings every day previously to the colliers commencing work, or more frequently if necessary, and shall be responsible for the condition of such workings. He shall in such examination use safety-lamps if necessary, and shall see that a sufficient number are always kept ready for use. This rule was completely set at naught. The pit had not been worked for some days, which gave grounds for still greater care; yet a lot of men were lowered into it, with a naked candle, without any preliminary examination. As they went down they perceived there was a good deal of foul air, and took the precaution to extinguish the light, calling out for a safety-lamp to be sent down. But the butty, Thomas Baker—the man who should have possessed greater prudence and caution than any—was above, and he thought there could not be any sulphur; and instead of going down with a safety-lamp, had a shovelful of fire placed upon the skip, which was lowered some twenty yards, when the explosion at once took place. Baker was killed, and for his reckless conduct cannot be answerable to any human tribunal; and the jury, unable to find any individual responsible, returned a verdict of "Accidental Death." The cause of this accident, as that of a hundred others, is that the person entrusted with the lives of many men did not possess either the knowledge or the prudence which a person placed in so responsible a position should be endowed with. In the management of engines, or finding millwrights of skill, foremen, overlookers, &c., it is found to be well nigh impossible to find men fit to be entrusted with such responsibilities. The same difficulty is experienced in introducing improvements in processes of manufacture. They can only be carried out by intense perseverance, owing to the ignorance, indifference, and prejudices of the workmen.

Mr. Bessemer's invention continues the subject of general consideration amongst the members of the trade. I hear that a number of the ironmasters from this neighbourhood are about to attend another experiment, which Mr. Bessemer will conduct for their inspection. The impression that this is a real discovery, and not a mere *ignis fatuus*, appears to be gaining ground. It will certainly have a most revolutionising effect upon the trade. There are at present houses of great eminence in the trade which do not make pigs at all, and which must, to adopt the new process, erect blast furnaces at their works. But there are others whose capital will scarcely admit of such extensive change, and they will probably have to convert their works into mere rolling mills, if some of them do not give way under the change which this invention will produce. In the case of one large works near this town—the Chillingham Works—the practice has for some time been adopted of running the molten iron from the blast furnaces into the puddling furnaces, instead of running it out into pigs, which are allowed to cool, and then re-heated. In this case the invention—one small element of which is already adopted—will readily be brought into operation. The puddlers and other furnacemen are beginning to take the alarm, and there can be little doubt that they must suffer seriously if their craft should be thus suddenly dispensed with by

this new process. No doubt a reduction in price would lead to an increased consumption of iron, and furnacemen might perhaps get employment in the mills, but it is scarcely possible to conceive that all could be absorbed in this way. The effect is sure to be sudden, for the difference in price, if the new process succeeds, will render competition by the old methods hopeless. People are waiting anxiously to know on what terms Mr. Bessemer will permit the use of his patent. While it is hoped that the rate will be moderate, I think few would desire that the inventor should not derive a very handsome reward for his success in effecting such an improvement in the manufacture of this ever increasingly important article.

#### REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

[FROM OUR CORRESPONDENT IN CHESTERFIELD.]

Aug. 29.—The attention of all scientific men is now directed to the results of the invention of Mr. Bessemer; and the greatest interest exists throughout the Iron Trade in these counties, as to the effect which such an important invention is likely to produce on the future prospects of the trade. The astonishment which it has produced has had the effect of somewhat checking business operations; ironmasters preferring to wait before speculating further than is necessary, to test the practicability of the invention. The trade will require to have further tests than have yet been made, and some time must elapse before the effects of such a discovery can be recognised, and the process carried out. We must have more experience of the working of Mr. Bessemer's plan, before we could conjecture its probable effect on the iron trade of these counties, and particularly of Derbyshire, which maintains a great celebrity for its pig-iron. One thing seems probable, that if malleable iron of good quality can be made from indifferent kinds of pig-iron, foreign nations which have hitherto upheld the iron trade, will become makers of malleable iron by the Bessemer process, instead of being purchasers. A few weeks, however, will give us further information; and as we hear the process is about to be tested, we shall wait with interest the results of experiments nearer home. We may state, however, that the general opinion of the trade is that the invention is practicable, and the wonder is that its extreme simplicity should not have led to an earlier discovery of the process. The demand for Derbyshire pig-iron is good, and prices are steadily maintained. Mr. Barrow, of the Staveley Iron-Works, has an extensive contract for drainage pipes.

The Coal Trade is gradually improving in Yorkshire, in consequence of the export demand for France. The trade in other respects continues dull and depressed, though hopes are entertained of an improvement next month, when the demand for winter generally commences. The unfortunate strike at the Oaks Colliery, Barnsley, still continues, and the men on strike evince no disposition to return to work. Some of them, who have been guilty of assaults, are now in prison awaiting their trials at the Yorkshire Sessions; and others, who occupy the houses belonging to the proprietors of the pit, have received notice of ejectment. The men who have refused to give the fortnight's notice have not been furnished with their clearance papers, and altogether the circumstances attending this strike afford another proof of the recklessness of the turn-out system.

Mr. James Heywood, of Derby, iron-founder, appeared before Mr. Commissioner Balfour, at the Nottingham Bankruptcy Court on Tuesday, for his certificate. The bankrupt's books had been badly kept, no profit or loss account had been furnished, and the bankrupt was so ignorant of his affairs that he could not specify any time when he was solvent. The Commissioner said he had traded recklessly, and used shameful expedients to keep himself afloat, by giving accommodation bills to the extent of 20,000l. to his bankers, Messrs. Crompton and Co., upon the pretence that they were fair and legitimate bills drawn and accepted in the fair course of trade. The certificate of the bankrupt was refused.

The half-yearly meeting of the Midland Wagon Company was held at Rotherham on Friday, under the presidency of W. G. Chambers, Esq., when a dividend of 10 per cent. was declared, and 2000l. added to the 15l. share fund.

The Holmes Coal Company is in a satisfactory position. The whole of the shares are taken up, and the company are making satisfactory progress with their preliminary arrangements.

We hear of favourable reports from the Peak Lead Mines. The Peak United and the Brightside Mines are doing well, and in the latter a large amount of ore is being raised to the surface. A lead mining company, under limited liability, has just been started in the north of Yorkshire for working the ores in that district.

#### STOCK, MINING, AND RAILWAY SHARES IN IRELAND.

[FROM OUR CORRESPONDENT IN DUBLIN.]

Aug. 28.—We have had very dull markets during the past week, owing to the unsettled state of the weather and to London prices. The fall in Consols has been limited to ¼ per cent., but business was merely nominal. The share market partook of the influence indicated by the Funds, and in the leading lines of railway prices have considerably receded, without any apparent cause to justify the movement downwards. Mining Company shares were more frequently dealt in, and increased in value, and it is likely they will increase still more. Wicklow Copper shares, however, quote lower to-day, as much as 2l. 10s. under the last price, but this is owing to some undue pressure. Waterford and Limerick shares have still further receded, the directors not having announced a dividend at the last meeting. The following are the latest quotations:—Consols, 94½; New Three per Cents., 94½; National Bank, 32½; City of Dublin Steam, 31½; National Insurance, 27½; Patriotic ditto, 7½; Consumers' Gas Company, 5½; Mining Company of Ireland, 14½; Wicklow Copper Mine, 29½; Belfast and Ballymena Railway, 54½; Cork and Bandon, 11½; Cork and Passage, 13½; Dublin and Wicklow, 6½; Great Southern and Western, 58½; Irish South-Eastern, 7½; Midland Great Western, 54; Newry and Warrenpoint, 6½; Waterford and Limerick, 25½.

Among the many natural productions of Ireland, there is one to which but little attention has hitherto been directed, partly owing to the circumstance of its not occurring generally in Ireland in any large deposits, and also because public attention has not been drawn to its development, consequent on its limited supply. I allude to gypsum, but especially to the immense deposit of it which exists in Monaghan, on the estate of E. I. Shirley, Esq., of Carrickmacross. The gypsum quarry on this estate has been worked for some time, and is capable of yielding immense blocks of this material, which are suited for any description of manipulation, and can be turned by machinery into highly ornamental works of art; such as statuary, pedestals, slabs, vases, &c. It was exhibited at the Irish Industrial Exhibition in this state, and excited not only admiration from those who took an interest in Ireland's resources, but it is chronicled in favourable terms in the Records of the Exhibition, as published in a compiled form. Such being the case, I owe no apology for bringing it under the notice of your English manufacturers, and showing them where they may obtain it in the greatest purity; and if I may judge from the facility which exists for producing it, I would add at a moderate cost also. I have myself seen it as it exists in the block, as also when ground into powder, forming plaster; which in purity, strength, and durability, equals the very finest cement that can be produced. As I have seen this proved I can bear willing testimony to the fact, supported as it is by the authority of some of our most eminent architects. It sets in about twenty minutes, and when perfectly dry is nearly as hard as stone. It is altogether a beautiful material, and will not fail to be more extensively employed when it becomes sufficiently known. The run of gypsum is about 1½ mile; it is proved to the depth of 136 feet, but its breadth is not yet ascertained. Lying to the east of this set is found bituminous shale, forming the commencement of a coal field, or large seam, which dips under the gypsum bed, it is thought, at a depth of about 80 fathoms. A formation something similar occurs near Belfast. This spirited proprietor, Mr. Shirley, is, I believe, about making arrangements to have this valuable material more generally known in the different markets; and from what I have seen of it, I think it only requires to be known to be fully appreciated.

THE ASSOCIATION FOR THE PREVENTION OF STEAM-BOILER EXPLOSIONS.—The usual monthly meeting of the committee of management of this association was held on Tuesday last at the office of the secretary, Mr. Henry Whitworth, 13, Corporation-street, Manchester, when the chief inspector, Mr. R. B. Longridge, presented his monthly report, from which we have been furnished with the following extracts:—"During the present month 167 firms have been visited, 467 boilers inspected, and 78 engines indicated." The following are the principal defects which have been observed:—"One boiler dangerous from defects in plates and angle iron. One



boiler dangerous from injury sustained in consequence of deficiency of water. Six boilers injured from the same cause, but not considered dangerous. In two cases the safety-valves have been found inoperative, and in three others, the water-gauges in like condition."

### THE IRON TRADE—ITS STATE AND PROSPECTS.

There is but little to notice in the trade since I wrote to you last week; if anything, the demand has rather improved, but sheets especially are better. The hot weather putting, as it did, a stop to the forges, increased the stock of pig-iron throughout the district. There have not been many sales effected for consumption, though price had tempted several to buy considerable lots, with the belief that it is impossible for pig-iron to go below its present quotation, with the declared price of bars at 9s. per ton. In my last letter I stated my belief that no alteration would be made at the preliminary meeting of the trade, and I am still of that opinion. It is to be hoped, if the make of pig-iron gets more than there is a demand for, that the makers will come to an arrangement to blow some furnaces out, for it will be a far more sensible thing than, by accumulating stocks, to be forced down in price; in fact, this would be the first step to a reduction upon manufactured iron. There is only one class of people who are benefited by cheap pigs, and that class is the marked-iron houses, who get the full price for their wrought-iron, as declared by the trade. Undersellers in wrought-iron scarcely ever are bettered, as the lower the price of pig iron is, so it enables them to quote less and less for their make, until the margin is sometimes 30s. per ton under the first makers. Mine is being sold for less than it was last quarter. The North Staffordshire people are raising large quantities, and have reduced their prices, in some instances, 1s. per ton. There is a great deal of Ulverston ore coming up, and if the freights per ton worse off than South Wales in this respect. Ore which costs 11s. per ton, f.o.b. at the shipping port, comes to 22s. or 23s. per ton by the time it is delivered at our works. Mine pig-iron may be quoted at an average of 4s. 1d. per ton.—IRONMASTER: *Worcester Journal* of this day.

**THE IRON TRADE.**—The following is a weekly report, to August 26, forwarded to us from Glasgow by Mr. Thomas Edington, showing the principal contracts for rails, castings, and machinery, known by him to be in the Iron Markets of Great Britain and Ireland:—

**CONTRACTS TAKEN IN YORKSHIRE AND WALES.**  
Large quantities of rails for exportation.  
In Kent.—Gas castings, for Tunbridge Wells.  
**NEW CONTRACTS.**  
500 tons rails, and 110 tons chairs, for Caledonian Railway.  
100 tons rails, for Dalkeith.  
2000 tons bridge rails, for South Wales Railway.  
A high-pressure steam-engine, for Glasgow.  
Gates and railings, for Basingstoke.  
70 tons flanged pipes, for Glasgow.  
Bridge girders, and 50 tons chairs, for Maryport and Carlisle Railway.  
**REMARKS.**—The Parliamentary Session just closed has passed 14 gas bills.

**THE MANUFACTURE OF IRON AND STEEL WITHOUT FUEL.**—In another column, we insert a letter from Mr. Charles Sanderson, of Sheffield, one of the most eminent metallurgists we have in all matters connected with the manufacture of iron and steel, in which he states it as his opinion that the metal so made will not draw—that it is not cast-steel of value in the arts. Let Mr. Bessemer refute this by producing bars rolled or hammered, and showing some fine steel articles which have been tested; this will set aside Mr. Sanderson's argument—or, if the process will not produce malleable iron and fine steel, we must acknowledge that Mr. Sanderson's opinion carries much weight.

**IMPROVED MODE OF IRON SMELTING.**—We understand that trials are shortly to be made in the blast-furnaces, with the view of bringing into use Mr. Mickle's new mode of smelting. Judiciously and spiritedly carried out, the power of the concentrated gaseous fuel will soon be evidenced, and it is possible that within two years from this time the whole of the iron we produce will be smelted by the new mode. Those who, with candour, have studied and understood our articles relative to Mr. Mickle's invention, will feel how much the country is likely to be indebted to those manufacturers who thus bring into actual service a system which, sooner or later, must generally be adopted. Staffordshire and Cleveland must most essentially be benefited by it; and those districts where there is peat will derive the advantage of the latter as fuel, perhaps, in the only way in which it can be used beneficially for smelting.

**RAILWAY TO THE NORTH YORKSHIRE MAGNETIC IRONSTONE.**—We have lately had occasion to notice successive discoveries of great seams of magnetic and calcareous iron ores in the North Yorkshire oolite. We have now the satisfaction of announcing to our readers that active steps are being taken by the landed proprietors, the North-Eastern Railway Company, and the towns interested, to promote direct railway communication between this important mineral district and the great coal fields of Durham and the West Riding. The northern, or Cleveland portion, has already been provided with a line traversing the country from Stokesley to Whitby, but the southern, and far richer portion, extending from Thirsk to Pickering, and containing the magnetic and other valuable seams of iron ore, is at present totally shut out of the market for want of railway accommodation, and it is to supply this want that a line is contemplated from Thirsk, through Helmsley and Kirby Moorside, to Pickering. By this arrangement, direct interchange of mineral traffic will be effected, at Thirsk Junction, between the magnetic ironstone district and the numerous furnaces and coal works in Durham, Northumberland, the West Riding, and Derbyshire, whilst at Pickering it will be connected by existing railways with the ship-building ports of Hull and Whitby. The national importance of quickly developing the resources of this new mineral district, extending over nearly 1000 square miles, will be fully appreciated, when it becomes known that a single acre furnishes 60,000 tons of magnetic oxide, containing 55 to 60 per cent. of iron, remarkable for its purity and extreme tenacity. These qualities, coupled with its profusion and moderate price, cannot fail to ensure an universal demand for this ore in the northern and midland counties, which will enable the ironmasters and Sheffield houses to manufacture the very best brands of the trade, and command the markets of the world.

**MACHINERY IN MOTION AT THE CRYSTAL PALACE.**—In noticing the respective performances of the two centrifugal pumps, exhibited by Appold and Gwynne, in the Machinery Court, and which may be seen daily at work, we remarked that they were driven by a pair of pendulous engines of peculiar construction, exhibited by J. A. Shipton, Dudley, which, from their novelty and compactness, together with the power they can transmit, we cannot pass over in silence, having ourselves witnessed Mr. Appold's pump throwing a fair stream of water when the steam has been admitted through a 3-inch pipe to the engines, with a pressure of about 35 lbs. The principle of these engines consists in an eccentric piston revolving in its own diameter between two planed plates, the steam being admitted top and bottom of this piston by a slide valve alternately, the same as in an ordinary engine, and this eccentric piston is propelled to and fro, but at the same time revolves. We cannot do better than quote the description, as given in "The Imperial Cyclopedia of Machinery," as follows:—"It will be obvious that the reciprocating action of the piston is the primary motion produced, and as its shaft or axis is disposed eccentrically, it produces circular motion, which is to be considered as a secondary action, as is the crank in the common steam-engine in its office of converting the primary reciprocating action of the piston into the rotary action of the first motion shaft; thus, whilst the ordinary reciprocating engine attains its object by two separate and distinct movements acting in concert, in the engine now before us, the piston that produces rectilinear motion also of itself converts that motion into a circular one." We are informed that many of these engines have been applied to winding, saw-mills, corn-mills, and other purposes; and in the course of a few weeks will be applied for screw propulsion, for which they are especially adapted, from the small space they occupy, and the speed they will run at; a vessel of 800 tons, being fitted with 60-horse power engines, on this principle, and also a small boat, fitted with 20-horse power, to act as tender, under the superintendence of Mr. John Braithwaite, of Great George-street, and we believe they are intended for the South American trade. It will perhaps be in the recollection of some of our readers that a 10-horse power engine worked a great portion of the Manchester cotton machinery in the Great Exhibition of 1851, and a prize medal was awarded; but the invention has since then been considerably simplified in its details, and the engines we have just noticed are well worth the inspection of parties interested.

### BESSEMER'S NEW IRON-MAKING PROCESS.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—I wish some of your readers would give me the benefit of their opinion respecting Mr. Bessemer's patent for boiling the iron. It seems as though his paper had taken every one by surprise, but I dare say, in a short time, we shall all be enlightened. "Ironmaster" asked whether the pigs he used in the experiment were cold air, hot air, mine, or cinder iron; I should like to know, too, as 12½ per cent. is a great loss upon the former. I notice that there were several Welsh Ironmasters at Buxton House, St. Paneras-road, last week, to witness an experiment, and that the blast was applied for 15 minutes to 6 cwt. 3 qrs. 18 lb. of molten iron (quality not named), and in 24 minutes the contents were drawn off, and produced 6 lbs. of steel of fine quality. Now, it is not steel that I am interested in, it is iron; and I am most anxious to know whether this process, which is so highly spoken of for converting iron into steel, will also produce malleable iron.  
Mr. Bessemer, in his paper, said that it could be done in 30 minutes; now, what a pity it is that these Welsh gentlemen (who, like myself, are iron, not steel workers) did not stay the extra six minutes, and see the ingot produced, which Mr. Bessemer in his paper said he only claimed for, that the makers of puddled iron claimed—viz. sufficient rolling to produce fibre—fibre, that's what I want to see; it is not the spray mass of crystalline iron "which the *Times* says would have been the result, if the boiling had been carried on a few minutes longer. I am much pleased with Mr. Bessemer's invention, and I hope he may be well remunerated for his talent. Still, there is much to be done to show how far it is applicable to supersede puddling; there is no doubt but that it is a grand discovery; but I am anxious to know that the extra six minutes will produce malleable iron after the mass has been steel, and subject to such an extraordinary heat. In asking these questions, I may safely subscribe myself,  
Aug. 28. No CHEMIST.

### WEEKLY LIST OF NEW PATENTS.

**GRANTS OF PROVISIONAL PROTECTION FOR SIX MONTHS.**—C. MORLEY, No. 39, Rue de l'Écluse, Paris, and 4, South-street, Finsbury, London: Rotary steam-engines.—S. MELLOR, Lancaster, and T. YOUNG, Manchester: Machinery for supplying water to steam-boilers.—F. ALLMAN and D. BETHUNE, Cambridge-terrace, Hyde-park, London: Apparatus for the production of steam, and in the apparatus employed in its application to motive powers.—L. J. B. MANERY, Paris: Manufacturing cast-iron.—R. A. BROOMAN, Fleet-street: Compressing, regulating the pressure and flow of, and conveying gas, parts of which are applicable to air and other fluids.—W. SMITH, Margaret-street, Cavendish-square: Apparatus for regulating the supply of steam to a steam-engine.—G. E. DENNIS, Lockleys, Hertford: Galvanic batteries.—E. THOMAS, Holywell-street, Westminster: Apparatus for ascertaining and indicating the number of rotations made by shafts or spindles in various descriptions of machinery.—R. A. BROOMAN, Fleet-street: Artificial fuel.—J. HARRIS, Doleighy: Apparatus for collecting and condensing smoke and gases generated in furnaces.—T. AUSTIN, Waltham Abbey, Essex: Machine for ascertaining the propelling force of gunpowder.—W. WEBSTER, Bunhill-row: Improved valve-cock.—E. KOFF, Paris: Manufacture of gas.—J. W. DOWNING, Birmingham: Manufacture of metallic and other wheels and pulleys.—H. BARAKAT, Leeds: Machinery or apparatus for stopping railway trains, which are also applicable to alarm signals generally.—J. B. CLARA, Paris and Finsbury, London: Producing and employing steam and the gaseous products of combustion for obtaining motive power.—P. A. GODEFROY, Ilington: Treatment of the matrix of rock quartz and all like substances for the extraction of auriferous, argentiferous, and other metals contained therein.—Col. S. S. de KIN-GERLID, Widdow: Obtaining motive power.—H. DUBA, Warrington, J. EVANS, Haydock: Consumption of smoke.—W. C. CAMBRIDGE, Bristol: Portable railways.—H. BESSEMER, New Cannon-street: Manufacture of iron and steel.—J. M. MAXWELL, Cambridge: Improvements in steam-engines, especially applicable to screw propulsion.

**IMPROVEMENTS IN FURNACES.**—Messrs. J. B. P. A. Thierry, jun., J. L. Richard, and the Baron H. de Martiny, have patented an invention, which consists of an arrangement of apparatus for consuming the smoke arising from the combustion of coal, wood, turf, and other fuel. The apparatus consists of a spiral tube or worm, which is partly carried through the furnace, in order that it may become highly heated by the burning fuel. This spiral tube conveys steam from the boiler or steam-chest, which becomes highly heated in its passage, and is allowed to escape over the burning fuel through a series of small apertures made in the spiral tube at the front part of the furnace, and also at the back part, behind the bridge. By this arrangement, the gaseous matters evolved by the fuel, and which ordinarily pass off in the form of smoke, combine with the superheated steam, which renders them combustible, thereby preventing the emission of smoke.

**IMPROVEMENTS IN DONKEY ENGINES.**—Amongst the more important auxiliaries to mining, we may notice the manufactures of Messrs. Coupe, of Clayton Foundry, Wigan, and more especially their steam-pumps, donkey engines, and high-pressure blast-engines, which it is stated can be supplied at very moderate prices. The principle of their steam-pump and improved horizontal high-pressure blast-engine is nearly the same; a description, therefore, of the latter will suffice. The peculiarity of the engine is in the dispensing with the fly-wheel, connecting-rod, crank, plunger blocks, and crank shaft; in fact, dispensing with one-half the tackle of the ordinary blast-engine. By the old arrangement the weight of the engine is nearly double, and its working parts quadruple, which, of course, render it so much the more liable to get out of order; the object of the arrangement being to get a rotary motion, whilst the reciprocating motion is required for the pump. The Couper system, it is stated, is so arranged, which it is stated can be supplied at very moderate prices. The principle of their steam-pump and improved horizontal high-pressure blast-engine is nearly the same; a description, therefore, of the latter will suffice. The peculiarity of the engine is in the dispensing with the fly-wheel, connecting-rod, crank, plunger blocks, and crank shaft; in fact, dispensing with one-half the tackle of the ordinary blast-engine. By the old arrangement the weight of the engine is nearly double, and its working parts quadruple, which, of course, render it so much the more liable to get out of order; the object of the arrangement being to get a rotary motion, whilst the reciprocating motion is required for the pump. The Couper system, it is stated, is so arranged, which it is stated can be supplied at very moderate prices.

**IMPROVEMENT IN PROPULSION.**—Mr. Wm. Chapman, of Sunderland, has patented an invention for improvements in propelling vessels. For which purpose the vessel is built with an opening through it on each side of the keel, and near the stern, within the vessel; and to each of such openings is affixed a cylinder, with its open end in or through such opening. The other end of each of these cylinders is closed, with an end or cover through a stuffing box, to which a piston-rod works. This piston-rod is affixed at its outer end to a piston, which works air and water tight in the cylinder above mentioned. On the other or inner end of the piston-rod is fixed another piston, which works in the cylinder, which is closed at both ends in such manner as to be moved by the water in the cylinder, and in the stuffing box, in order to drive the piston therein to the stern end of the steam cylinder, and consequently, the other piston against the water which flows into the other or open ended cylinder, in such manner that the water may be driven out at the open end of such cylinder against the water in which the vessel is floating, and thereby propels the vessel forward. In thus moving the two pistons by the pressure of the steam, on one of them a vacuum will be formed on the other side of the piston which is acting on the water, and the other end the steam cylinder to that at which the steam is admitted is also kept vacuum, so that the piston which drives the water from the open cylinder will also be moved by the steam against the pressure of the atmosphere into a vacuum, and when the steam is allowed to flow out of the steam cylinder the pressure into a vacuum will bring back both pistons.

**STEAM-BOILERS, VALVES, &c.**—Messrs. T. Cowburn and G. Wm. Muir have recently patented some improvements, which consist in forming steam-boilers with vertical passages uniting the outer shell and external fire with the internal flues, the latter being formed of cells or chambers separated from each other by water partitions, having openings by tubes or flues for the passage of the products of combustion through them. In the application of bladed or fan shafts, either hollow or solid, placed under the internal flues, and passing through the whole or part of the boiler, which, when set in motion, cause the water in the lower parts to pass toward the upper parts of the boiler. In forming the supply pumps to the boiler with a hollow ram, permitting the passage of water into and through them, the valves of the pumps being segments of a sphere, with the weight placed below the surfaces in contact. The pump is in connection with a column of water in an air vessel, through which the exhaust steam may be passed. In forming the float-valve indicator for indicating the height of water in the boiler, with an equilibrium valve connected by a sliding tube with a float in the boiler. In forming the glass water gauges with adjustable parts, so as to suit various lengths of glass tube. In constructing the feed and overflow valves to the boiler, with a float attached to the feed valve, and applying the overflow in a chest capable of being placed on the summit of a stand fixed pipe. In the construction of the stop valves with spherical surfaces, having spindles, applying pressure at a point below the seating, the spindle passing through a nut secured into the valve. In forming the valves for the discharge of mud from boilers of a ram shape, the foot being convex, the side of the ram closing one opening, and the convex foot another. In forming a fusible plug cap, the bottom of which screws on to the sides. The cup is fixed over a hole upon the top of the flues in an inverted position. The bottom is perforated with holes filled with lead or other fusible substance. And in constructing the safety-valve to boilers of a convex form, and with a hollow spindle passing in and out through the top. The spindle is carried into the boiler and connected to a swivel valve, actuated by a lever and float.

**PREVENTION OF BOILER EXPLOSIONS.**—In our last Journal we drew attention to the fearful explosion at the mills of Messrs. Warburton and Holker, whereby the lives of 10 persons were sacrificed, and 23 more or less injured. The exploded boiler—a double tubular one—35 feet long and 9 feet diameter, was rent both longitudinally and transversely, the parts being torn asunder like brown paper; one part was found 60 yards away. The use of the retort steam boiler patented by Messrs. Dunn, Hattersley, and Co., of the Windsor-bridge Iron Works, Fendleton, near Manchester, and which has already been referred to in the *Mining Journal*, renders an explosion more difficult, and if it does take place, diminishes the mischievous effects by giving it only a partial character. The results are proposed to be attained by the substitution for the present steam boiler of a number of cylinders, or retorts, about 10 feet long and 18 inches in diameter, composed of X-shaped cast-iron, having spindles, and strong cast-iron ends forming the pipe junctions. The cylinders and retorts are placed in parallel lines, and the water-supply pipe is connected with one end of each by a short pipe or neck, through which the water is pumped into all the cylinders, which are generally kept about half full. The water is converted into steam in the cylinders, and the steam passes from the cylinders on the opposite side from whence the water supply is obtained through a tube in the steam chest, and from thence the steam becomes a motive power, and its action is properly directed. The fire plays underneath and over the cylinders, in a sinuous manner. The great advantage here obtained is, that in the event of explosion, only one cylinder is affected instead of the whole boiler; and if the action is too great upon the portion exposed, the cylinder may be turned over, so that the fullest wear may be obtained from each. The boiler of Messrs. Dunn and Hattersley is easy of transport, and the retorts can be conveyed in separate portions; and if their invention were generally adopted, many of the catastrophes which have now to be deplored would be avoided.

**PRIZE ESSAY ON SMOKE PREVENTION.**—The very elaborate and highly interesting essay on the prevention of the smoke nuisance, by Mr. Chas. Wye Williams, for which the Society of Arts awarded a special prize of a gold medal of the value of 25l., has just been reprinted and published by Mr. Weale, of Holborn; and the excellent manner in which it is got up, both as regards printing and illustrations, should entitle it to a place of honour in the list of the treasures of a scientific record of all facts bearing upon the subject, and the style of writing, neat and elegant—the name of the author being an ample guarantee for its interest and correctness.

### TO CHAIN AND ANCHOR-SMITHS, ALKALI MANUFACTURERS, SHIP-BUILDERS, AND OTHERS.

**FLINT FORGE AND MALLEABLE CAST-IRON FOUNDRY, &c.**  
**M. R. ORMISTON WILL SELL, BY AUCTION,** at the Royal Oak Inn, in the town of Flint, on Thursday, Sept. 13, 1856, at three o'clock in the afternoon, in the following or such other Lot or Lots, as may be decided upon at the time of sale, and subject to conditions to be then produced:—  
Lot 1.—All those important and well-situated business premises known as the **FLINT FORGE**, comprising (as they now stand) two high-pressure steam-engines, of 25 and 10-horse power respectively, with two cylindrical boilers and fittings attached; hammer helve, trains of roughing and bar rolls, with holsters and couplings complete; shears, straightening block, floor plates, &c.; two puddling and one charcoal furnaces; a blowing cylinder, with receiver, pipes, and cupola.  
The portion of the works adapted to the manufacture of malleable iron castings includes crushing-mill, with 16-in. rolls; melting pot and annealing furnaces; moulding, casting, and crucible shops; warehouse, smiths and carpenters' shops, &c.; office and store room.  
And also all that **YARD** lying between the Forge and Flint Castle, and abutting on the Cop of the River Dee, well adapted for a timber yard and shipbuilding purposes. This lot is held under long leases at moderate ground rents, and from its position on the River Dee, and contiguity to the Chester and Holyhead Railway, is admirably situated as business premises.

Lot 2.—All that **MESSUAGE or DWELLING HOUSE**, situated at Castle Hill, with the walled garden and yard belonging thereto, in the occupation of Mr. Brown. Several tons of coals, stonebricks, iron, and wood patterns, old metal, tools, &c., will either be sold by auction, or may be taken by the purchaser of the works at a valuation, as may be determined upon, or the proprietor will sell off separately the whole or any portion of the steam-engines, machinery, or tools, if a reasonable offer is made for the premises.  
Further particulars may be had on application to Messrs. POTTS and ROBERTS, solicitors, Chester; Mr. GATLIFE, solicitor, 19, Coleman-street, London; Mr. JOSEPH HOWELL, Hawarden; or to the auctioneer, St. Asaph. Wigfair, St. Asaph, Aug. 1856.

### CHEADLE, STAFFORDSHIRE.—TO COPPER, BRASS, AND SPECTER MANUFACTURERS, AND MILLOWNERS.

**MESRS. EDWARDS WILL SELL, BY AUCTION,** at the Royal Oak Inn, Cheadle, in the county of Stafford, on Friday, October 3d, 1856, at Three o'clock in the afternoon, subject to conditions to be then produced, the undermentioned valuable **FREEHOLD PROPERTY**, situated at the Brass-Works, near Cheadle, in the county of Stafford, in the following and such other lots as may be agreed upon at the time of sale. Description of property.

No. on plan.	Lot 1.	Quantities.
1	A close of land, called the Slang	0 0 34
2	Garden	0 0 17*
3	Ditto	0 0 18*
4	Ditto	0 0 10*
5	Ditto	0 0 16*
6	A close of land, called Stable Field, in the occupation of A. Blang, Esq.	1 1 9*
7	A dwelling-house and garden, in the occupation of Widow Hall.	0 1 10*
8	All those extensive and commodious copper and brass works, with water, crushing-mill, melting-house, washhouse, charcoal-house, pot-chambers, and large warehouses, blacksmith's shop, and other conveniences; also two workmen's cottages; the whole including the extensive yards, &c., containing	2 2 29*
	(Total	4 a. 2 r. 19 p.)

Lot 3.—All those valuable and extensive copper and specter smelting-works, with roaster, furnace, and other conveniences, and possessing the advantage of a chimney-shaft of great elevation, commanding an immense draught for the furnaces; also various buildings, and two workmen's cottages; containing, including the extensive yards (as now staked out)

Lot 4.	Quantities.
9	0 3 8+
10	0 3 8+
11	3 3 0+
	(Total

Lot 5.—All those valuable and extensive copper and specter smelting-works, with roaster, furnace, and other conveniences, and possessing the advantage of a chimney-shaft of great elevation, commanding an immense draught for the furnaces; also various buildings, and two workmen's cottages; containing, including the extensive yards (as now staked out)

Lot 6.	Quantities.
12	0 3 4+
13	3 1 3+
14	0 0 22+
15	0 1 11+
	(Total

Lot 7.—Is well situated for building purposes.  
Lot 8.—Affords a good site for the erection of a silk or other mill requiring a large number of hands, which might be obtained at moderate wages; part of the buildings on this lot might be converted into cottages at a small expense. The present affords a favourable opportunity for entering upon the business of a copper and brass smelter, which has long been carried on at the works now offered for sale.

Plans of the property may be inspected at the place of sale, at the office of Mr. CHARLES SMITH, jun., Land Surveyor, Alton, near Cheadle, and at the office of Messrs. WARD, SON, and COLLIS, Solicitors, Newcastle-under-Lyme, from either of whom further particulars may be obtained.

### COPELAND'S PATENT SAFETY BLASTING CARTRIDGES.

Established in 1849, and adopted by the principal mines in Devon and Cornwall. All others are imitations.  
"Copeland's cartridges are the most simple, the most safe, and the most efficient that can be produced."—*Royal Cornwall Gazette*.

**PRICES.—WATERPROOFED.**  
No. 1, equal to 6 ozs. of gunpowder, 30s. per 100.  
No. 2 " " " " 36s. "  
No. 3 " " " " 42s. "  
No. 4 " " " " 48s. "  
No. 5 " " " " 54s. "  
No. 6 " " " " 60s. "  
No. 7 " " " " 66s. "  
No. 8 " " " " 72s. "  
No. 9 " " " " 78s. "  
No. 10 " " " " 84s. "  
No. 11 " " " " 90s. "  
No. 12 " " " " 96s. "  
No. 13 " " " " 102s. "  
No. 14 " " " " 108s. "  
No. 15 " " " " 114s. "  
No. 16 " " " " 120s. "  
No. 17 " " " " 126s. "  
No. 18 " " " " 132s. "  
No. 19 " " " " 138s. "  
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No. 197 " " " " 1206s. "  
No. 198 " " " " 1212s. "  
No. 199 " " " " 1218s. "  
No.











## THE MINING SHARE LIST.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
5130	Alfred Consols (copper), Phillack	27. 11s. 10d.	£13 1/2	15 1/2	£15 0 0	20 6-0-Aug. 4, 1850.
1824	Baldewind (tin), St. Just	11 1/2	4 1/2	5 1/2	12 5 0	0 5-0-Jan. 1, 1854.
4000	Bedford United (copper), Tavistock	25. 6s. 8d.	7	6 1/2	8 10 0	0 2-0-Aug. 28, 1856.
240	Boscam (tin), St. Just	20 1/2	9	6 1/2	6 0 0	0 3-0-May 30, 1856.
200	Botalack (tin, copper), St. Just	91 1/2	175	170	375 5 0	0 3-0-Aug., 1856.
100	Bryant (copper, tin), St. Just	50	67 1/2	120	13 0 0	0 3-0-Apr. 30, 1856.
100	Bryant Hall (lead), Flint	20	120	120	0 0 0	0 3-0-July 31, 1856.
1000	Bryant Hall (lead), Flint	20	120	120	0 0 0	0 3-0-July 31, 1856.
6003	Bwlch (silver-lead), Cardiganshire	3	4 1/2	4 1/2	0 2 0	0 2-0-July 31, 1856.
1000	Carn Brea (copper, tin), Illogan	15	60	60	231 10 0	0 2-0-Dec. 15, 1855.
2048	Carnyorth (tin), St. Just	4 1/2	5	5	0 15 0	0 3-0-June 16, 1856.
10000	Cattle State Quarry, Dolwyddelan	1	1 1/2	1 1/2	0 2 0	0 4-0-Feb. 8, 1855.
200	Cefn Cwm Brynau (lead), Cardiganshire	33	75	75	3 0 0	0 3-0-Sept. 4, 1855.
256	Cendurrow (copper, tin), Camborne	20	130	125 1/2	68 0 0	0 2-0-July 1, 1856.
50000	Craven Moor (lead), Yorkshire	1	1	1	0 0 0	0 3-0-July 1, 1856.
128	Cwmystwith (lead), Cardiganshire	60	130	130	55 0 0	0 3-0-Nov. 22, 1855.
1024	Devon Great Consols (copper), Tavistock	1	405	395 400	500 0 0	0 9-0-July 31, 1856.
672	Ding Dong (tin), Gwilt	32	40	38	11 7 6	0 0-0-June 3, 1856.
179	Dolcoath (copper, tin), Camborne	257 1/2	145	145	891 10 0	4 10-0-June 9, 1856.
13500	Drake (tin, copper), Calstock	17. 10s.	2	2	222 0 0	0 2-0-July 29, 1856.
300	East Dore (lead), Cardiganshire	32	87	87	12 0 0	0 2-0-July 10, 1856.
128	East Dore (tin, copper), Pool, Illogan	21 1/2	250	240 245	260 0 0	0 3-0-Aug. 24, 1856.
1024	East Wheal Margaret (tin, copper)	3 1/2	5 1/2	5 1/2	0 3 4	0 10-0-Aug. 7, 1856.
1400	Eyam Mining Company (lead), Derbyshire	35	25	25	404 13 0	0 3-0-Feb. 12, 1856.
491	Fowey Consols (copper), Tywardreath	40	26	26	49 7 3	0 2-0-May 22, 1856.
2240	Foxdale, Isle of Man	71. 10s. 6d.	36 1/2	36 1/2	10 4 0	0 2-0-May 22, 1856.
320	General Mining Co. for Ireland (cop. lead)	25	36 1/2	36 1/2	1 0 8	0 3-0-June 5, 1853.
4445	Gonamans (copper), St. Cleer	13 1/2	26 1/2	27	0 7 6	0 7-0-Dec. 21, 1852.
1024	Great Polgoth (tin), St. Austell	4 1/2	1	1	0 10 0	0 4-0-Oct. 12, 1852.
6000	Great South Tolgus	2 1/2	9	9	0 2 6	0 2-0-June 27, 1855.
26055	Great Wheal Vor (tin, copper), Helston	5	3	3	0 5 0	0 3-0-June 20, 1856.
119	Great Work (tin), Gernoe	100	180	150 160	206 10 0	0 10-0-Aug. 26, 1856.
1024	Herodotus (lead), near Liskeard	8 1/2	2 1/2	2 1/2	12 12 0	0 7-0-Apr. 18, 1854.
1024	Hingston Down Consols (copper), Calstock	3 1/2	3 1/2	3 1/2	2 13 0	0 7-0-Apr. 18, 1854.
2000	Holyrood (copper), near Tipperary	11	8 1/2	8 1/2	3 11 0	0 5-0-July 30, 1856.
74	Jamaica (lead), Mold, Flintshire	37. 13s. 6d.	—	—	380 0 0	0 5-0-Mar. 10, 1851.
20	Leasey Mining Company, Isle of Man	100	1000	1000	1320 0 0	0 50-0-Jan. 3, 1856.
160	Levant (lead), North Derbyshire	2 1/2	110	105	1084 10 0	0 0-0-Aug. 12, 1856.
400	Lisaburgh (lead), Cardiganshire, Wales	18 1/2	125 1/2	105	225 12 0	0 5-0-July 1, 1855.
6000	Marke Valley (copper), Cardigan	47. 10s. 6d.	4	4	0 5 0	0 3-0-Sept. 7, 1855.
5000	Mendip Hills (lead), Somerset	3	2 1/2	2 1/2	1 2 6	0 5-0-May 21, 1856.
5000	Merilyn (lead), Flint	3 1/2	2 1/2	2 1/2	1 11 0	0 2-0-June 22, 1853.
90000	Miner Co. of Ireland (copper, lead, coal)	7	1 1/2	1 1/2	11 14 6	0 7-0-July 8, 1856.
5000	Nanteco and Penrhyn	1	1 1/2	1 1/2	0 1 6	0 1-0-Apr. 20, 1855.
7500	Nantlle Vale (plate), Llanfyllin	1	1	1	0 3 0	0 1-0-Nov. 29, 1854.
6000	Nether Heath, Westmoreland	2 1/2	1 1/2	1 1/2	0 2 0	0 1-0-May 21, 1856.
470	Newtonards Mining Company, Co. Down	30	35	35	47 0 0	0 1-0-July 15, 1856.
200	North Pool (copper, tin), Pool	22 1/2	70	65 70	324 0 0	0 2-0-Dec. 26, 1854.
140	North Wheal (copper), Camborne	10	75	75	249 10 0	0 4-0-Sept. 26, 1855.
6000	North Wheal Bassett (copper, tin), Illogan	10 1/2	35	33 33 1/2	9 14 0	0 12-0-Aug. 20, 1856.
6400	Par Consols (copper), St. Blazey	1 1/2	30	19 19 1/2	25 10 0	0 0-0-July 1, 1856.
500	Peak United (lead), North Derbyshire	7 1/2	8 1/2	8 1/2	18 10 0	0 10-0-Apr. 12, 1856.
200	Phonix (copper, tin), Linkinghorne	30	480	475	13 13 0	0 10-0-June 28, 1856.
1000	Polbriar (tin), St. Agnes (Preferential)	15	65	60 61	48 4 6	0 4-0-Aug. 20, 1856.
500	Providence Mines (tin), Uny Lelant	207. 13s. 2d.	25	25	0 7 0	0 3-0-June 15, 1856.
2500	Rosewood and Bacheildon (lead)	11 1/2	11 1/2	11 1/2	25 10 0	0 2-0-Aug. 11, 1856.
512	Rosewarne United (copper, tin), Gwinnar	12	67	65 65 1/2	0 5 0	0 2-0-June 30, 1856.
12000	Sortridge Consols (cop.), Whitehurst, Devon	6 1/2	2 1/2	2 1/2	412 0 0	0 8-0-May 27, 1856.
256	South Caradon (copper), St. Cleer	2 1/2	285	280 290	60 0 0	0 30-0-June 18, 1856.
128	South Crinnis (copper), St. Austell	19	375	360	3 6 0	0 5-0-Apr. 10, 1856.
9000	South Tamar (silver-lead), Beccles	17. 6s. 6d.	2 1/2	3 1/2	6 0 0	0 4-0-May 27, 1855.
256	South Tolgus (copper), Redruth, Cornwall	16	125	130	206 5 0	0 8-0-July 7, 1856.
496	South Wheal Frances (cop.), Illogan	18. 18s. 9d.	335	360 365	8 8 6	0 15-0-Dec. 10, 1853.
1024	Sparre Consols (cop.), St. Just, Cornwall	3	4 1/2	4 1/2	0 17 6	0 15-0-Mar. 14, 1856.
250	Sparre Moor (copper), St. Just, Breage	23. 7s. 8d.	3 1/2	3 1/2	0 17 6	0 7-0-Apr. 1, 1852.
1024	St. Aubyn and Grylla (cop., tin), Breage	17. 17s. 4d.	3 1/2	3 1/2	88 0 0	0 8-0-Feb. 21, 1854.
94	St. Ives Consols (tin), St. Ives	80	100	100	4 13 6	0 2-0-Feb. 7, 1856.
9500	Tamar Consols (silver-lead), Beccles	4 1/2	4 1/2	4 1/2	7 8 6	0 5-0-May 28, 1856.
6000	Tincoft (copper, tin), near Pool, Illogan	9	4 1/2	4 1/2	8 11 3	0 5-0-May 28, 1855.
2048	Treban (silver-lead), Menheniot	4 1/2	6 1/2	6 1/2	1 15 0	0 1-0-Feb. 21, 1854.
572	Trevelyan Consols (tin), St. Ives	11 1/2	6	6	467 15 0	0 5-0-June 4, 1855.
76	Trevelyan (copper), Gwennap, Cornwall	110	21	21	403 13 6	0 21-0-Apr. 29, 1851.
120	Trevelyan (copper), Gwennap, Cornwall	100	21	21	0 5 0	0 5-0-July 8, 1856.
4000	Trevelyan (copper), Gwennap, Cornwall	12 1/2	3 1/2	3 1/2	3 0 0	0 3-0-June 16, 1856.
4006	Trevelyan (copper), Gwennap, Cornwall	12 1/2	3 1/2	3 1/2	55 0 0	0 3-0-Dec. 20, 1854.
100	Trumpet Consols (tin), near Helston	95	95	95	61 5 0	0 2-0-Feb. 12, 1856.
400	United Mines (copper), Gwennap	40	90	90 92 1/2	0 3 3	0 1-0-May 8, 1856.
20000	Vale of Towy (ld.), Llanguunor, Carmarthen	40	1 1/2	1 1/2	2 5 0	0 2-0-Jan. 12, 1855.
1024	Wellington (copper, tin), Penryn	8 1/2	1 1/2	1 1/2	0 1 0	0 5-0-July 16, 1855.
10300	Welsh Consols (copper), Tal-y-bont, Card.	5	3	3	1 2 0	0 3-0-July 16, 1855.
2000	Widit (New Shares of St. each)	3	3 1/2	3 1/2	8 8 6	0 13-0-July 16, 1855.
6000	West Basset (copper), Illogan	1 1/2	30	29	274 5 0	0 5-0-Aug. 22, 1855.
256	West Caradon (copper), Liskeard	30	140	125 130	12 0 0	0 3-0-May 14, 1855.
256	West Damsel (copper), Gwennap	£10 7	80	80	26 15 0	0 10-0-July 3, 1856.
1024	West Providence (tin), St. Erth	5	19 1/2	19 1/2	46 10 0	0 6-0-Aug. 11, 1856.
400	West Wheal Seton (copper), Camborne	38 1/2	250	225	6 10 0	0 10-0-Oct. 25, 1855.
1238	Wheal Arthur (copper), Calstock	7	6	6	41 10 0	0 1-0-Aug. 4, 1856.
240	Wheal Ball (tin), St. Just	6 1/2	285	285	801 5 0	0 10-0-July 15, 1856.
512	Wheal Bassett (copper), Illogan	5 1/2	275	250 290	12 0 0	0 10-0-Sept. 9, 1855.
256	Wheal Buller (copper), Redruth	3 1/2	6 1/2	6 1/2	2 2 0	0 3-0-June 10, 1856.
1024	Wheal Charlotte, Penryn	3 1/2	6 1/2	6 1/2	2 2 0	0 3-0-June 10, 1856.
5700	Wheal Clifford (copper), Gwennap	—	300	300	2 2 0	0 3-0-June 10, 1856.
5000	Wheal Exmouth and Adams United	41. 14s.	8 1/2	8 1/2	2 2 0	0 3-0-June 10, 1856.
128	Wheal Fortescue, Bodmin	1	1	1	2 2 0	0 3-0-June 10, 1856.
512	Wheal Friendship (copper), Devon	30	115	115	2375 10 0	0 8-0-May 10, 1854.
128	Wheal Jane (silver-lead), Kes	3 1/2	15	18 20	4 10 0	0 8-0-Oct. 25, 1855.
1024	Wheal Kitty (tin), Uny Lelant	£1 7 2	10 1/2	10 1/2	2 2 0	0 3-0-June 10, 1856.
430	Wheal Lovell (tin), Wendron	19 1/2	40	36 37	30 0 0	0 2-0-Aug. 9, 1854.
448	Wheal Margaret (tin), Uny Lelant	19 1/2	40	36 37	19 12 6	0 2-0-June 17, 1856.
1024	Wheal Mary Ann (lead), Menheniot	3 1/2	35	35	191 8 0	0 5-0-Aug. 15, 1856.
80	Wheal Oriel, St. Just, Cornwall	70	260	260	40 10 0	0 3-0-Aug. 23, 1852.
240	Wheal Reeth (tin), Uny Lelant	24 1/2	11 1/2	11 1/2	269 10 0	0 3-0-Aug. 11, 1856.
198	Wheal Seton (tin, copper), Camborne	107	180	180	50 10 0	0 1-0-Apr. 29, 1856.
520	Wheal Trevelyan (silver-lead), Liskeard	8 1/2	21	22 23	10 2 6	0 7-0-Jan. 18, 1854.
1024	Wheal Trevelyan (tin, copper), Gwinnar	9 1/2	4	4	1 17 0	0 7-0-Aug. 15, 1856.
4096	Wheal Wrey (lead), St. Ives	16. 9s.	8 1/2	8 1/2	25 13 0	0 10-0-July 10, 1856.
5000	Wicklow (copper), Wicklow	5	32	32	—	—

\* Dividends paid every two months. † Dividends paid every three months.

## FOREIGN MINES.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
5000	Alten Mining Company (copper), Norway	£14 1/2	3 1/2	3	4 5 0	0 15-0-Nov. 21, 1853.
51850	Baden, Grand Duchy of	—	—	—	0 1 0	0 1-0-Nov. 18, 1852.
10000	Barras (copper), South Australia	3	125	125	34 17 6	0 10-0-Dec. 19, 1854.
2464	Barras (copper), South Australia	3	125	125	160 0 0	0 5-0-Dec. 19, 1854.
12000	Cobre Copper Company (copper), Cuba	40	55	52 54	81 12 0	0 3-0-July 29, 1856.
100000	Colonial Gold, Australia	1	1	1	0 1 6	0 1-0-Mar. 28, 1854.
10000	Copiapu Mining Company (copper), Chili	16	18	16 18	5 8 0	0 10-0-May 8, 1856.
20000	General Min. Assoc. (iron, coal), Nova Scotia	20	15	14 15	9 10 0	0 10-0-June 24, 1856.
15000	Linares (lead), Pozo Anecho, Spain	3	8	7 8	3 10 0	0 5-0-June 28, 1856.
10000	Lusitanian (of Portugal)	1 1/2	1 1/2	1 1/2	0 2 0	0 2-0-July 27, 1855.
93815	Marigueta and New Granada	1	1	1	0 1 0	0 1-0-June 29, 1853.
32000	Obispo (lead), New Granada	1	1	1	0 2 0	0 2-0-Sept. 29, 1853.
10000	Pontigault (silver-lead), France	20	11	9 11	1 0 0	0 1-0-June 26, 1853.
7000	Royal Santiago (copper), Cuba	12 1/2	3	2 1/2	33 0 0	0 1-0-July 12, 1848.
104000	Ran Fernando (silver-lead), Linares	1	3s. 6d.	3s. 6d.	0 1 0	0 7-0-June 30, 1854.
11000	St. John del Rey (gold), Brazil	15	22	20 22	33 7 6	0 10-0-June 13, 1856.
43174	United Mexican (silver), Mexico	Av. 28 1/2	4	3 1/2	1 16 0	0 4-0-Feb. 14, 1853.
70000	Waller (gold), Gochland Co., Virginia	1	1	1	0 9 0	0 9-0-July 7, 1855.
30000	Mexican and South American Smelting Co.	9	4 1/2	4 1/2	6 15 0	0 7-0-Dec. 12, 1855.
88670	North British Australasian	1	1	1	0 1 8	0 1-0-Apr. 17, 1855.

## NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
75000	Adelaide Land and Gold Co.	2	2 1/2	2 1/2	—	—
35000	Adelaide (silver-lead), Spain	2	2 1/2	2 1/2	—	—
50000	Chanceryville Freehold	1	—	—	—	—
54860	Colonne Mining Company	1	—	—	—	—
12460	Port Bowen, New Granada	1 1/2	—	—	—	—
20000	Iberian (silver-lead), Spain	1 1/2	—	—	—	—

## MINES WHICH HAVE SOLD ORES.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
6000	Abbey Consols (lead), Cardigan	1	1 1/2	1 1/2	—	—
1024	Aberdovey (lead), Merioneth	2 1/2	—	—	—	—
6930	Algoed Consols Slate Quarry	2 1/2	—	—	—	—
940	Balloon Con. (tin), Uny L	2 1/2	—	—	—	—
12000	Bangorhen (lead), W. Gwynedd	3 1/2	4 1/2	4 1/2	—	—
6000	Ballyvaughan, Co. Clare	2 1/2	3 1/2	3 1/2	—	—
10000	Bampfylde (copper), Devon	3 1/2	—	—	—	—
3000	Basset Graze United (cop.), Kea	2	2	2	—	—
4000	Bedford Consols	7 1/2	—	—	—	—
508	Bell and Llanarth, Gwynedd	11	2	2	—	—
7000	Berallston United, Devon	—	—	—	—	—
5000	Bodelwydd, South Wales	£1 7	—	—	—	—
1000	Bolling Well (copper)	13	8	7 1/2	8	—
4056	Borlinton Consols, Plympton	4 1/2	—	—	—	—
4000	Bromfloyd (lead), W. Glam.	£1 1	—	—	—	—
6000	Buriald Con. (tin), Bosc. L.	1 1/2	—	—	—	—
420	Budnick Consols (tin), Perran	2 1/2	—	—	—	—
6400	Bulter and Basset United	1 1/2	4 1/2	4 1/2	—	—
812	Buttenden (lead)	£6 8	3	—	—	—
5000	Cae-Cynon, Cardiganshire	10s. 6d.	—	—	—	—
3384	Calstock Consols (copper)	4	2 1/2	—	—	—
3704	Calstock United (tin and cop.)	£6 2	—	—	—	—
1600	Camborne Consols	13	4 1/2	—	—	—
64	Cambran (gold)	£2 1/2	—	—	—	—
6000	Candver Mawr (lead, copper)	£1 2	—	—	—	—
32	Canol Quarry	50	28	—	—	—
1024	Cardigan Consols, St. Cleer	10	8 1/2	8 1/2	—	—
239	Cargoll, Newlyn	25	32	29	—	—
50000	Cardiganshire Slate	1	1 1/2	—	—	—
4000	Carnewas (lead, cop.), Mawgan	1	—	—	—	—
1053	Caerwannall (copper), Gwynedd	11	—	—	—	—
6400	Carvath United, St. Austell	2 1/2	3 1/2	3 1/2	—	—
8000	Catherine and Glyn Consols	—	—	—	—	—
6000	Cawth, North Wales	£2 3	—	—	—	—
6000	Cawth (tin, sil., id.), Cornwall	1	1 1/2	1 1/2	—	—
2600	Clara (lead), Cardiganshire	£ 8	1 1/2	1 1/2	—	—
1420	Clijah & Wentworth (tin, cop.)	17 1/2	13	—	—	—
8000	Clovenoe Wood, Gwynedd	8s.	—	—	—	—
2000	Coed Mawr Pool (id.), Llanwrst	6s.	5	—	—	—
1000	Collecmech (copper)	10	50	—	—	—
15000	Conemara (sil., lead), Gwilym	4	—	—	—	—
2510	Cook's Kitchen, Illogan	£15 18 9	2	—	—	—
20900	Coosheen (copper), Cork	1	—	—	—	—
256	Copier Hill	83	125	—	—	—
255	Cradoes (cop., sil., cop.), St. Austell	—	—	—	—	—
3000	Craigaur (copper, sil., lead)	£ 60	—	—	—	—
12300	Cross-hill and Tees Head	—	1	—	—	—
6400	Crow Hill, St. Stephen's	1 1/2	—	—	—	—
9000	Cubert (silver-lead), Cornwall	2 1/2	—	—	—	—
10000	Cwm Daren (id.), Cardiganshire	14s.	—	—	—	—
6700	Cwmdule Rook and Green Lake	3 1/2	—	—	—	—
1000	Cwm Erfin (lead), Cardigansh.	8	2	—	—	—
6000	Cwm Sebon	£2 11 6	1 1/2	—	—	—
3600	Dalhvie (cop., lead), Brecon	2 1/2	—	—	—	—
1000	Daren (sil., lead), Cardiganshire	—	3 1/2	—	—	—
1000	Derwent (sil., lead), Cornwall	60	—	—	—	—
4098	Deyon & Cornwall United (cop.)	£4 0 9	4 1/2	4 1/2	—	—
3307	Devon and Courtenay (copper)	—	—	—	—	—
2695	Devon Burra Burra (copper)	£4 19	2 1/2	—	—	—
10000	Devon Tin Mines, Dartmoor	1	—	—	—	—
4566	Devon Whist Buller	£1 10 6	—	—	—	—